**APPENDIX 2**

IN THE UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF NORTH CAROLINA

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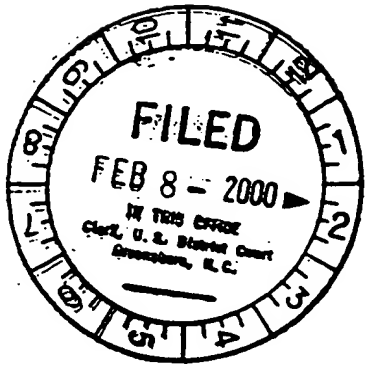
| RHÔNE-POULENC AGRO S.A., Plaintiff, v. MONSANTO COMPANY and DEKALB GENETICS CORP., Defendants. | ) | No. 1:97CV1138 |




MEMORANDUM OPINION

TILLEY, Chief Judge

Three of Plaintiff Rhône-Poulenc Agro S.A.'s ("RPA") claims were adjudicated before juries during two separate phases, culminating on June 2, 1999. This Memorandum Opinion will address several post-trial issues. This Opinion will also discuss for the record the reasoning for several rulings made by the Court during the course of the trial.[1]

## I. FACTUAL HISTORY

The facts of the case, stated in the light most favorable to the prevailing party, RPA, are as follows.

RPA is a worldwide manufacturer and vendor of diversified agricultural products, and is engaged in chemical and biotechnological research and development with particular interests in the area of weed control and crops.

[1] Since this opinion contains a number of cross references, an Index has been placed on the last two pages to assist in locating specific sections.

Defendant Monsanto Company ("Monsanto") manufactures and sells a diversified line of agricultural products as well, including herbicides, and is engaged in biotechnological research and development. Defendant DeKalb Genetics Corporation ("DeKalb"), which became a fully-owned subsidiary of Monsanto in December 1998, is involved in agricultural genetics and biotechnology for corn seed, and is one of the largest corn seed suppliers in the United States.

This case involves sophisticated biotechnology and genetic engineering. Monsanto produces a herbicide called Roundup, whose active ingredient is glyphosate. Glyphosate is an effective, yet environmentally safe, herbicide that, appropriately applied, will kill all green foliage with which it comes into contact. This case involved research and development of genetically engineered corn that is tolerant to glyphosate herbicides, such as Roundup. The ability to grow glyphosate-tolerant corn increases the efficiency of farmers, because they can spray glyphosate herbicide over the entire crop of corn, killing all of the weeds but not damaging any of the corn plants.

In 1985, DeKalb and Calgene, Inc. ("Calgene") entered into an agreement for the joint development of crops containing Calgene's C-AroA, or CT-7, gene[2] (an "EPSPS" gene derived from salmonella bacteria) that would make corn crops tolerant to glyphosate (the "1985 Agreement"). The 1985 Agreement called for

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[2] This C-AroA, or CT-7, gene is the gene contained in patents referred to throughout the trial as the "Comai" patents.

the formation of a "Project Review Committee," composed of scientists from each company, that would have general oversight responsibility for the progress of each party under the agreement. It also provided for various royalty payments to be made by DeKalb to Calgene for products developed under the agreement. As part of the 1985 Agreement, DeKalb received an exclusive license to the Comai patents in the field of use of corn. In 1991, RPA, DeKalb, and Calgene entered into an "Assignment and Assumption Agreement," (the "1991 Agreement") whereby RPA assumed Calgene's rights and obligations under the 1985 Agreement. These agreements often are referred to together as the "1985/1991 Agreements."

The 1985/1991 Agreements dealt only with the CT-7 gene; however, RPA and DeKalb were involved together in a broader collaboration with the ultimate goal of genetically altering corn to make it resistant to glyphosate. In the collaboration, RPA performed the initial genetic work by creating various genetic constructs. Then, DeKalb "transformed" corn cells by placing RPA's constructs into corn cells, grew full corn plants from the transformed cells in the greenhouse, and finally, in the field, grew full corn plants from the seeds of the greenhouse plants. At each stage, DeKalb tested the transformed cells and plants for glyphosate resistance. Neither party had the capability to perform the other party's role in this collaboration, and both roles were necessary in order to produce glyphosate resistant corn.

Under this collaboration, genetic material other than the CT-7 gene was

transferred from one company to the other. On June 17, 1991, at the first joint meeting of RPA and DeKalb after the 1991 Agreement was signed, the companies agreed that any material transferred between the companies would be subject to a Confidentiality Agreement originally entered into by Calgene and DeKalb in 1984. Material transferred under this Confidentiality Agreement was to be used for "the limited purpose of . . . investigation and evaluation. No rights to manufacture, license or otherwise deal in or with the Information shall be acquired by the receiving party, directly or indirectly, by reason of its receipt of the Information." (Pl.'s Ex. 1, 1984 Confidentiality Agreement ¶ 4.) The term "Information" was defined to include, among other things, maize regulatory sequences, maize transposable elements, and corn genes. (Id. ¶ 2.)

At a November 1992 meeting, Dr. Georges Freyssinet of RPA told Dr. Catherine Mackey of DeKalb that RPA would provide to DeKalb new genetic material containing a mutated EPSPS gene from corn (as opposed to the bacterial CT-7 gene) on which RPA had been working. In return for providing these new constructs, Dr. Mackey agreed that DeKalb would provide RPA with the results of its testing of the constructs.[3] Also at this meeting, RPA notified DeKalb of its decision to withdraw from at least some of its responsibilities under the 1985/1991 Agreements.

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[3] Whether Drs. Freyssinet and Mackey entered a binding agreement was contested in the first trial of this matter. The jury determined, among other things, that an agreement was made at this November 1992 meeting.

When Dr. Freyssinet returned from this meeting, he requested that Dr. Rick DeRose, an RPA scientist, prepare various constructs of the mutated corn gene to send to DeKalb. Pursuant to that end, Dr. DeRose combined an optimized transit peptide ("OTP") with a maize EPSPS gene that had been mutated at two different locations in the amino acid sequence (the "double mutant maize EPSPS gene"). This new construct, consisting of the OTP and the double mutant maize EPSPS gene, is the subject of RPA's trade secret misappropriation claim, and was designated as "RD-125." The OTP is covered by Claim 11 of U.S. Patent 5,510,471 ("'471 patent")[4] and is the subject of RPA's patent infringement claim. Dr. DeRose transferred RD-125 to DeKalb in February 1993.[5]

In late 1993 and early 1994, in a greenhouse, DeKalb succeeded in growing transformed corn plants that contained RPA's RD-125 construct and were resistant to Roundup herbicide at potentially commercial levels. On February 18, 1994, DeKalb sent RPA a report of its results, stating that:

> [W]e have now demonstrated tolerance in transgenic plants in the greenhouse to up to four times the field application recommended by Monsanto for tolerant corn! We will repeat these experiments in the field in the summer of 1994. It is obvious from these results that the mutant maize gene has been the key to success.

(Pl.'s Ex. 241.) Dr. Freyssinet of RPA responded with a three sentence letter

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[4] On December 14, 1999, the '471 patent was reissued as Patent RE 36,449. In this Opinion, the Court will continue to use the '471 designation.

[5] Dr. DeRose transferred other constructs to DeKalb at the same time; however, only the content and combination of the RD-125 are the subject of this lawsuit.

stating: "I thank you for the report on development of glyphosate resistant corn. The results look good[.] I hope they will be confirmed by the field experiments." (Pl.'s Ex. 242.) Then, on March 10, 1994, DeKalb sent RPA another letter that once again mentioned the summer field trials and the gains in glyphosate tolerance DeKalb had achieved in the greenhouse with RD-125. (Pl.'s Ex. 245.) In addition, that letter requested RPA's opinion regarding the use of RD-125 for other projects, and also requested a response to the "many questions" that need to be answered regarding the "recent successes" of RD-125. (Id.)

DeKalb conducted field tests in Hawaii in the summer of 1994, and on September 6, 1994, DeKalb received results from the tests that indicated that corn plants containing RPA's RD-125 were resistant to four times the normal level of Roundup herbicide. The report from the field testing was not sent to RPA. Rather, on September 7, 1994, Dr. Chris Flick of DeKalb sent RPA a letter which stated, in its entirety, that:

> As the results that we have obtained in maize with the glyphosate resistant double mutant maize gene provided by RPA to DEKALB have been very encouraging, we are interested in whether this gene would also function as a selectable marker in soybeans. Is it possible for DEKALB to use this gene in soybeans as a selectable marker?
>
> I will await your answer.

(Pl.'s Ex. 310.) In 1994, these letters were the extent of the communications between DeKalb and RPA regarding RD-125 and its introduction into corn lines. Following the tests, DeKalb immediately began backcrossing the plants with RD-

125 with its Elite lines of corn. (April 14, 1999 tr. p. 230; April 15, 1999 tr. pp. 41, 42)

Also during the summer of 1994, Calgene and RPA filed a patent infringement action against Monsanto in which Calgene and RPA accused Monsanto of using the patented technology contained in the Comai patents in making, using, and selling glyphosate resistant soybeans. Calgene owned the Comai patents, and RPA had certain exclusive rights under these patents in soybeans. DeKalb also had an interest in the litigation, because under the 1985 Agreement, DeKalb was the exclusive licensee of the Comai patents in the field of use of corn.

In December 1994, two agreements were negotiated arising from these events. First, RPA, Calgene, and Monsanto agreed to a settlement of the patent litigation begun in July 1994. Monsanto paid $8 million in return for a co-exclusive license (shared in part with DeKalb) under the Comai patents, for use in all fields. Concurrent with this settlement process, RPA and DeKalb entered a new agreement (the "1994 Agreement") in which DeKalb agreed to share its exclusive license under the Comai patents in the field of use of corn with Monsanto. Under the 1994 Agreement, DeKalb was provided with $500,000 as its share of the Monsanto settlement proceeds. Moreover, the 1994 Agreement dissolved the 1985 and 1991 Agreements, and RPA granted DeKalb the "world-wide, paid-up right to use" various technologies, including RD-125, in the field of use of corn.

The 1994 Agreement also gave DeKalb "the right to grant sublicenses to the aforementioned right to use" the technologies.

DeKalb eventually developed a glyphosate-tolerant corn line containing RD-125, named the "GA21 corn line." In January 1996, DeKalb and Monsanto entered an agreement to work together on a variety of projects, including glyphosate-tolerant corn, and DeKalb licensed to Monsanto the GA21 corn line, which included the RD-125 construct. Subsequently, corn seeds from GA21 were commercialized and marketed by Monsanto and DeKalb under the brand name "Roundup Ready." Sales of Roundup Ready corn seeds began in 1998.

Other facts will be discussed as needed in the legal conclusions sections of this Opinion, infra.[6]

## II. PROCEDURAL HISTORY

RPA's First Supplemental and Amended Complaint ("Complaint") contained six claims: (I) misappropriation of RPA technology by DeKalb and Monsanto; (II) breach of the 1991 Agreement by DeKalb; (III) breach of the covenant of good faith and fair dealing as to the 1994 Agreement by DeKalb; (IV) rescission of the 1994 agreement; (V) patent infringement against Monsanto and DeKalb; and (VI) antitrust violations against Monsanto and DeKalb. (See Compl. [Doc. #68].) Count II was dismissed with prejudice pursuant to a stipulation approved by the Court on

[6] An index can be found at the end of this Opinion. The index indicates the page number on which each section and subsection of the Opinion begins.

February 2, 1999. (Stipulation of Voluntary Dismissal [Doc. #242], at 1.) Both Defendants have filed motions to dismiss Count VI, which are under consideration by the Court. Discovery on Count VI has been postponed until after the Court rules on these motions.

DeKalb initially made two counterclaims: (I) RPA's breach of the 1994 Agreement; and (II) RPA's breach of the 1991 Agreement. (DeKalb's Answer [Doc. #78].) The first counterclaim was dismissed pursuant to a stipulation approved by the Court on February 2, 1999. (Stipulation of Voluntary Dismissal [Doc. #242], at 1.)

Monsanto initially made a single counterclaim for tortious interference. (Amended Answer and Countercl. [Doc. #74].) However, this counterclaim also was dismissed pursuant to a stipulation approved by the Court on February 2, 1999. (Stipulation of Voluntary Dismissal [Doc. #242], at 1.)

On February 23, 1999, both Defendants amended their Answers to include subsequent counterclaims. (DeKalb's Amended Counterclaim [Doc. #260]; Monsanto's Amended Counterclaim [Doc. #261].) DeKalb made three counterclaims: (I) breach of the 1994 Agreement; (II) breach of the Covenant of Good Faith and Fair Dealing of the 1994 Agreement; and (III) patent infringement. Monsanto made three counterclaims as well: (I) breach of the 1994 Settlement Agreement; (II) breach of the covenant of good faith and fair dealing of the 1994 Settlement Agreement; and (III) patent infringement.

Granting a motion by the Defendants, the Court bifurcated the trial of RPA's claims so that a first jury would resolve the issues of licensing and ownership of RD-125, and if necessary (i.e., if DeKalb and Monsanto were not licensed), a second jury would consider RPA's patent claim. Cross-motions for summary judgment were filed prior to the first phase. The Court denied summary judgment on RPA's rescission claim, and deferred decision on the remaining counts until after it was determined in the first trial whether the 1994 Agreement would be rescinded.

On April 21, 1999, at the end of the first phase, the jury found that RPA agreed to allow DeKalb to use the RD-125 construct in return for DeKalb's agreement to provide the results of its testing to RPA. The jury found that this agreement existed in three forms: as an oral contract made between Dr. Freyssinet of RPA and Dr. Mackey of DeKalb at the Mystic, Connecticut meeting in November 1992; as an implied contract formed by the parties' conduct after the Mystic meeting; and as a modification of the 1985/1991 Agreements. (Jury Verdict [Doc. #361], at 1-2.) Moreover, the jury found that DeKalb breached this agreement by not providing the results of the Hawaii field tests in the summer of 1994, and that this breach caused RPA to enter the 1994 Agreement on different terms than it otherwise would have. (Id. at 2.) Finally, the jury found that DeKalb fraudulently induced RPA to enter the 1994 Agreement on the terms that it did. The jury awarded RPA $15 million for DeKalb's unjust enrichment, $1 in nominal damages,

and $50 million in punitive damages.

Based upon the assumption that the Court would rescind the 1994 Agreement as a result of this verdict, the Court and the parties moved forward to the second phase of the case, which adjudicated RPA's trade secret misappropriation and patent infringement claims.[7] At a motions hearing on April 26, 1999, the effect of the jury's verdict on the remainder of the case was discussed, several outstanding motions were resolved,[8] and various claims and counterclaims were dismissed with prejudice.[9]

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[7] Because of a misunderstanding between the Court and the parties, the parties agreed to move the trade secret misappropriation claim to the second phase. As a result, Monsanto was dismissed from the first phase because Monsanto was not a party to any contract with RPA to provide results from testing the RD-125, and no evidence was adduced that Monsanto was involved in any fraud.

[8] At the motions hearing, the parties agreed that the following motions in limine should be DENIED as MOOT: (1) RPA's Motion in Limine to Exclude Certain Testimony regarding Monsanto's Best Mode Defense [Doc. #365]; (2) Defendants' Joint Motion in Limine to Preclude Testimony by RPA Witness Michael Freeling [Doc. #383]; and (3) Monsanto's Motion in Limine to Preclude Proffer of Declarations as Evidence Experiments were Performed [Doc. #385].

[9] RPA withdrew its third claim, for breach of the covenant of good faith and fair dealing of the 1994 Agreement. Thus, Defendants' Motions for Summary Judgment [Docs. #216 & #222] are DENIED as MOOT as they pertain to RPA's Count III. DeKalb withdrew its counterclaim for RPA's alleged breach of the 1991 Agreement. Therefore, RPA's motion for summary judgment on this counterclaim [Doc. #225] is DENIED as MOOT.

DeKalb's third counterclaim involved an alleged breach by RPA of the 1994 Agreement and its fourth counterclaim involved an alleged breach of the covenant of good faith and fair dealing of the same 1994 Agreement. As the 1994 Agreement will be rescinded, DeKalb's third and fourth Counterclaims are DISMISSED as MOOT. Moreover, RPA's motion to dismiss these counterclaims [Doc. #275] is DENIED as MOOT; however, this decision does not affect the second part of RPA's Motion to Dismiss [Doc. #275], which addresses Monsanto's

Most important for the second phase of the trial, RPA voluntarily withdrew a portion of its claims for patent infringement in Count V of the Supplemental Complaint: Claims 15 and 17 of U.S. Patent 5,633,448 ("'448 patent"). Thus, the only patent claim adjudicated in the second phase of the trial was Claim 11 of the '471 patent. In response to this announcement, both DeKalb and Monsanto conceded that they did not retain any claim of noninfringement as to the '471 patent. Before the second phase of the trial began, the Court ruled that Monsanto was a bona fide purchaser from DeKalb of a license for both the OTP, which is the subject of the '471 patent, and the RD-125 construct. As such, Monsanto could not be held liable by RPA for patent infringement based on the '471 patent or for trade secret misappropriation based on the RD-125 construct. Therefore, Claims I and V against Monsanto were dismissed.

Also prior to the second phase of the trial, the Court ruled that DeKalb could not present to the jury a defense that it was licensed to use the OTP and the RD-125 construct under a modification of the 1985/1991 Agreements. The first jury had found that DeKalb breached any such modification by not disclosing the 1994 field test results, and the Court determined that DeKalb's breach necessarily was material to any modification of those agreements. Therefore, the Court ruled that DeKalb could not rely for its license defense upon the very contracts it had materially breached.

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second and third counterclaims.

Ultimately, then, four issues were presented to the jury in the second phase of the trial. First, the jury determined that the RD-125 was a trade secret from April 1996 until February 1997, and that DeKalb misappropriated that trade secret by transferring it to Monsanto and by using it in its commercial Roundup Ready corn. Second, the jury determined that Claim 11 of the '471 patent was not obvious; therefore it was enforceable by RPA against DeKalb. Third, the jury -- serving in an advisory capacity on DeKalb's inequitable conduct defense -- found that a declaration submitted to the Patent and Trademark Office was not fraudulent. Fourth, the jury declined to award punitive damages against DeKalb for its trade secret misappropriation.[10] Moreover, the parties agreed that the Court would determine whether DeKalb's infringement of the '471 patent was willful.

The case now comes before the Court for resolution of several issues. The Court first will address all of the parties' motions for judgment as a matter of law, as well as explain several rulings of law it made during the course of the trial. Next, the Court will address DeKalb's various motions for a new trial. Finally, the Court will resolve all issues relating to remedies and damages.

## III. MOTIONS FOR JUDGMENT AS A MATTER OF LAW

Pursuant to Federal Rule of Civil Procedure 50(b), after each jury verdict, DeKalb renewed its motion for judgment as a matter of law, which it had made at

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[10] The parties stipulated to the amount of compensatory damages for which DeKalb was liable for its trade secret misappropriation.

the close of evidence. The text of Federal Rule of Civil Procedure 50(b) states, in part,

> [i]f, for any reason, the court does not grant a motion for judgment as a matter of law made at the close of all the evidence, the court is considered to have submitted the action to the jury subject to the court's later deciding the legal questions raised by the motion. The movant may renew its request for judgment as a matter of law by filing a motion no later than 10 days after entry of judgment -- and may alternatively request a new trial or join a motion for a new trial under Rule 59. In ruling on a renewed motion, the court may:
> (1) if a verdict was returned:
> (A) allow the judgment to stand,
> (B) order a new trial, or
> (C) direct entry of judgment as a matter of law . . . .

Fed. R. Civ. P. 50(b). All evidence should be viewed in the light most favorable to the prevailing party, here RPA, and all reasonable inferences should be drawn in its favor. See Konkel v. Bob Evans Farms, Inc., 165 F.3d 275, 279 (4th Cir. 1999). DeKalb's Rule 50(b) motion should be denied if, giving RPA the benefit of every legitimate inference in its favor, there was evidence upon which a jury could reasonably return a verdict for RPA. See Cline v. Wal-Mart Stores, Inc., 144 F.3d 294, 301 (4th Cir. 1998). In making this determination, the Court is not permitted to retry factual findings or credibility determinations reached by the jury. See id. Rather, the Court should assume that testimony in favor of RPA is credible, "unless totally incredible on its face," and ignore the substantive weight of any evidence supporting the moving party. Id. (quoting Duke v. Uniroyal, Inc., 928 F.2d 1413, 1419 (4th Cir. 1991)).

A Rule 50(b) motion should be granted only if the Court determines, "without

weighing the evidence or considering the credibility of the witnesses, that substantial evidence does not support the jury's findings." Konkel, 165 F.3d at 279.

III (A)

The first phase of the trial in this matter involved RPA's claim, under Count IV of its Complaint, for rescission of the 1994 Agreement based upon fraudulent inducement. RPA asserted that DeKalb fraudulently induced it to enter the 1994 Agreement by not disclosing the results of the 1994 field tests. Originally, RPA based its claim for rescission on both constructive and actual fraud. In its summary judgment Memorandum Opinion [Doc. #327], this Court determined that genuine issues of material fact existed with regard to each theory.

Constructive fraud arises when a party to a confidential or fiduciary relationship breaches a duty that has been implied by law because of the special relationship between the parties. See Watts v. Cumberland County Hosp. Sys., Inc., 317 N.C. 110, 115-16, 343 S.E.2d 879, 883-84 (1986). Although RPA initially asserted several bases under which such a relationship could be found, the Court, in its April 1, 1999 Memorandum Opinion, determined that a genuine issue of material fact existed only as to whether RPA and DeKalb were engaged in a joint venture together. (Mem. Op. [Doc. #327], at 16.) Thus, at trial, RPA asserted that it was engaged in a joint venture with DeKalb and that DeKalb, by not disclosing the field test results, breached a fiduciary duty owed to RPA as a joint venturer.

However, before the case was submitted to the jury and for the reasons set forth below,[11] the Court ruled, as a matter of law, that RPA and DeKalb were not engaged in a joint venture. Therefore, the jury was not permitted to consider RPA's constructive fraud claim.[12]

The elements of actual fraud are: (1) a false representation or concealment of a material fact; (2) that was reasonably calculated to deceive; (3) which was made with the intent to deceive; (4) that did in fact deceive (or reasonably induce reliance); and (5) resulted in injury or damage. See 15 N.C. Index 4th, Fraud, Deceit, etc. § 7 (1992); cf. Myers & Chapman, Inc. v. Thomas G. Evans, Inc., 323 N.C. 559, 568, 374 S.E.2d 385, 391 (1988).[13] RPA did not assert that DeKalb made any affirmative false statements regarding the field test results. Therefore, in order to satisfy the first element of its fraud claim, RPA was required to prove that DeKalb had a duty to disclose the field test results. See Setzer v. Old Republic Life Ins. Co., 257 N.C. 396, 399, 126 S.E.2d 135, 137 (1962) (holding that fraud can be practiced by silence as well as by a positive misrepresentation, if a duty to speak exists). RPA asserted that this duty to disclose arose either from a

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[11] See discussion infra Part III(A)(i).

[12] Nor was the jury instructed that, under an actual fraud claim, a "duty to disclose" may arise if the concealing party has a fiduciary or confidential relationship with the allegedly defrauded party.

[13] Although the Court relied on both North Carolina and Illinois law in its summary judgment opinion, (Mem. Op. [Doc. #327], at 9), the Court later determined that North Carolina law applies to the fraud claims.

contractual duty of DeKalb's or from a partial or ambiguous statement made by DeKalb in order to mislead RPA. In its Memorandum in Support of its Motion for Judgment as a Matter of Law [Doc. #517], DeKalb asserts that RPA failed to satisfy any of the five elements for actual fraud. (Id. at 3-19.)

However, for the reasons set forth below, the Court determines that substantial evidence supports the jury's finding that DeKalb, realizing the economic potential of RD-125, fraudulently induced RPA to enter the 1994 Agreement by intentionally concealing information about the efficacy and potential value of RD-125 and taking affirmative steps to create a false impression about the success of RD-125.

Although a breach of contract claim was not specifically pled by RPA, the evidence demonstrated and the jury found that DeKalb breached a contractual duty to keep RPA informed of test results. Therefore, the Court, under Federal Rule of Civil Procedure 15(b), will amend the pleadings to add a claim for breach of contract, in order to conform to the evidence. See discussion infra Part III(A)(iii).

III (A) (i)

After the close of RPA's case-in-chief, the Court ruled there was insufficient evidence to support a jury finding that RPA and DeKalb were engaged in a joint venture, and, therefore, the jury was not instructed regarding RPA's constructive fraud claim. Nor was the jury instructed that, under an actual fraud claim, a "duty to disclose" may arise if the concealing party has a fiduciary or confidential

relationship with the allegedly defrauded party. This Part of the Memorandum Opinion will explain that decision.

Constructive fraud arises when a party to a confidential or fiduciary relationship breaches a duty that has been implied by law because of the special relationship between the parties. See Watts, 317 N.C. at 115-16, 343 S.E.2d at 883-84. When a fiduciary relationship exists, a presumption of fraud is raised when the superior party obtains a possible improper benefit from the relationship. See id. In this case, if DeKalb, the transferee of RD-125, stood in a confidential or fiduciary relationship to RPA, the transferor of RD-125, it would be the duty of DeKalb "to exercise the utmost good faith in the transaction" and to disclose to the transferor all material facts relating thereto. Vail v. Vail, 233 N.C. 109, 114, 63 S.E.2d 202, 206 (1951). Similarly, in a fraudulent omission case, a duty to disclose material information may arise "where a fiduciary relationship exists between the parties to the transaction." Harton v. Harton, 81 N.C. App. 295, 297, 344 S.E.2d 117, 119 (1986). As a matter of law, a fiduciary relationship exists between members of a joint venture. See Reese v. Melahn, 53 Ill. 2d 508, 513, 292 N.E.2d 375, 379 (1973).[14]

To determine whether a joint venture existed, the Court first determined the appropriate law to apply. As a federal court applying state law, this Court applied the choice of law rules of the jurisdiction in which it sits. See Klaxon Co. v.

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[14] The reason for using Illinois law is explained infra.

Stentor Elec. Mfg. Co., 313 U.S. 487, 496 (1941). Under North Carolina's choice of law rules, the interpretation of a contract is governed by the law of the place where the contract was made. See Tanglewood Land Co. v. Byrd, 299 N.C. 260, 262, 261 S.E.2d 655, 656 (1980). However, if the parties to the contract have agreed that a given jurisdiction's substantive law will govern the interpretation of the contract, then a North Carolina court will give effect to that contractual provision. See id.

In its pretrial briefing, RPA asserted that a joint venture was created by DeKalb and RPA under the 1985 and 1991 Agreements. (RPA Answering Br. [Doc. #246], at 12.) The 1985/1991 Agreements had a choice of law provision that designated Illinois law as the proper law to apply to disputes arising from the Agreements. (Pl.'s Ex. 2, Art. 8.9, at 19.)

In Illinois, a joint venture is

> an association of two or more persons [or entities] to carry out a single enterprise for profit. A formal agreement is not essential to establish a joint venture. Rather, the existence of a joint venture may be inferred from the facts and circumstances demonstrating that the parties in fact entered into a joint venture. In determining whether a joint venture exists, the intent of the parties is the most significant element.

O'Brien v. Cacciatore, 227 Ill. App. 3d 836, 843, 591 N.E.2d 1384, 1388-89, 169 Ill. Dec. 506, 510-11 (1992) (citations omitted). The following elements must be present for a joint venture to exist: (1) an agreement, either express or implied, to carry on a single enterprise with a legitimate purpose; (2) a community of interest in the purpose; (3) expectation of profits; (4) duty to share profits and losses; and

(5) the right of each person to direct and govern the conduct of the other members of the venture. See Pinkowski v. Coglay, 347 F.2d 411, 413 (7th Cir. 1965); O'Brien, 227 Ill. App. 3d at 843, 591 N.E.2d at 1389, 169 Ill. Dec. at 511. The burden of proving that a joint venture exists is on the party claiming that such a relationship exists, and whether or not a joint venture exists typically is a question of fact for the trier of fact. See O'Brien, 227 Ill. App. 3d at 843, 591 N.E.2d at 1389, 169 Ill. Dec. at 511. However, in this case, RPA did not present sufficient evidence of an essential element, i.e., dual control over the relationship. "Possibly, the most important criterion of a joint venture is joint control and management of the property used in accomplishing its aims." Herst v. Chark, 219 Ill. App. 3d 690, 694, 579 N.E.2d 990, 992, 162 Ill. Dec. 176, 178 (1991). "The legal requirement of a right to management or control has been interpreted as requiring some right by the parties to direct and govern the conduct of each other in connection with the joint venture." Id. at 696, 579 N.E.2d at 994, 162 Ill. Dec. at 180.

The evidence presented at trial did not support the view that RPA and DeKalb were able to "direct and govern" each other's conduct. Rather, each party completed its work for the project independently. Indeed, the relationship between the parties developed because each party perceived the other as having the ability to complete different aspects of the research necessary to produce glyphosate tolerant corn. (Apr. 7, 1999 Tr. [Doc. #483], at 136.) RPA was an expert in genetic research and in creating various genetic constructs, while DeKalb's

expertise involved taking a genetic construct and "transforming" it into corn. (Apr. 12, 1999 Tr. [Doc. #486], at 213-14; Apr. 13, 1999 Tr. [Doc. #487], at 20-21.) Each company needed the other to complete its own part of the project in order for the overall project to be successful. No evidence was presented of any DeKalb employee directing RPA on how to complete its genetic research and development. Nor was any evidence presented of RPA directing DeKalb's efforts to transform corn and to grow corn from seeds generated through the transformation process. In fact, the creator of RD-125, Dr. Rick DeRose of RPA, testified that he could not provide support for DeKalb's experiments with RD-125 after he gave the construct to DeKalb, because RPA was

> responsible for making these constructs, and DeKalb was responsible for actually getting these constructs into corn. So unless they needed information on how these constructs were made or how to test these constructs to see if they're working, we didn't have any more real input into what was going on.

(Apr. 8, 1999 Tr. [Doc. #484], at 54.) Dr. DeRose had never even witnessed transformed corn until he visited DeKalb's laboratory in Mystic, Connecticut in August 1993. (Id. at 62-63.)

Of course, the companies did participate in "Project Review Committee" meetings, pursuant to the 1985/1991 Agreements. This Committee, according to the 1985/1991 Agreements, consisted of three members from each company and had "general oversight responsibility for the progress of each party." (1985 Agreement, Pl.'s Ex. 2, ¶ 6.1, 6.2.) Periodically, the Committee met to "report to

each party . . . on all results achieved in their respective work . . . [and to] coordinate interaction of activities and results from work to achieve Benchmark objectives of developing Products in the most expeditious fashion." (Id. at ¶ 6.3.) The then-President of Calgene, Roger Salquist, testified that the project was a "jointly-managed project" through the Project Review Committee prior to 1991. (Apr. 7, 1999 Tr. [Doc. #483], at 135.)

However, the Committee's relevance to this analysis is minimal because in November 1992, RPA gave DeKalb official notice that it was ending its participation in the glyphosate resistance project and in the Project Review Committee meetings, and there was no evidence that the parties ever discussed or even contemplated another meeting.[15] From that point forward, any semblance of the "joint management" to which Mr. Salquist testified was non-existent. While the companies did communicate after RD-125 was transferred, typically these communiques were not examples of "joint control"; rather the letters were merely the exchange of potentially useful information. The evidence was unequivocal that, even if the Project Review Committee provided some element of "joint control" over the glyphosate resistance collaboration prior to 1992, once the RD-125 was transferred to DeKalb, RPA had almost no input into DeKalb's work with the construct, the Project Review Committee never met again, nor was ever scheduled

[15] Dr. Freyssinet testified that RPA was merely "suspending" its involvement in the project.

to meet again. Therefore, at least after RPA withdrew from the Project Review Committee meetings -- and the collaboration generally -- no joint venture between the companies existed. See Electrical Contractors, Inc. v. Goldberg & O'Brien Electric Co., 29 Ill. App. 3d 819, 823, 331 N.E.2d 238, 242 (1975) ("Where the right to control is lacking, a joint enterprise does not exist." (quoting Bainbrich v. Wells, 28 Colo. App. 432, 476 P.2d 53, 54 (1970) (internal quotation marks omitted))).

III (A) (ii)

In the Memorandum in Support of its Motion for Judgment as a Matter of Law [Doc. #517], DeKalb asserts that RPA failed to satisfy any of the five elements for actual fraud. (Id. at 3-19.) Viewed in the light most favorable to the prevailing party -- here, the plaintiff -- the evidence tended to show the following:

In November 1992, at the last project review meeting between the parties, DeKalb requested that RPA permit it to experiment with the non-Comai, double mutant maize EPSPS gene, which had been developed by Dr. Rick DeRose of RPA and which was showing some early promise in the lab for conferring glyphosate resistance. In return, DeKalb, which had the technology to transform corn plants with this genetic material, promised to keep RPA, which did not have that technology, informed about the progress of its experiments.

Dr. DeRose combined the double mutant gene with an "Optimized Transit Peptide" developed by RPA, named the combination RD-125, and sent the

construct to DeKalb. Throughout 1993, Dr. DeRose kept in contact with the scientists from DeKalb, including Michael Spencer and Dr. Flick. (Apr. 8, 1999 Tr. [Doc. #484], at 54-66.) The two companies exchanged information periodically and Dr. DeRose visited DeKalb's facility in Mystic, Connecticut in August 1993. (Apr. 8, 1999 Tr. [Doc. #484], at 60.) Moreover, in 1993 and 1994, a pattern developed whereby DeKalb updated RPA about information it had gathered from various phases of testing the construct, (Pl.'s Ex. 211, 241), and asked for RPA's permission to use the construct for other purposes, (Pl.'s Ex. 245, 262). Consistent with its promise to keep RPA informed of test results, DeKalb timely provided a complete copy of a February 1994 report discussing laboratory testing in which plants grown from individual cells transformed with RD-125 had survived an application of glyphosate four times stronger than a normal commercial application. The cover letter accompanying the report characterized the results as "encouraging" and the material referred to upcoming field trials during the summer of 1994.

Researchers in this area understood that success in the laboratory seldom meant success when an experiment was carried into the field. In fact, there had never been successful field testing for resistance to commercial application levels of glyphosate in corn plants grown from seeds.

On September 6, 1994, Chris Flick learned of the successful Hawaii field tests. He understood that this was the first time corn grown from seeds and

planted outdoors had withstood application of four times commercial levels of glyphosate and he understood this was one of the biggest happenings in the nine-year history of the project. The following day, September 7, 1994, Flick wrote to Dr. Freyssinet about RD-125 but mentioned nothing about the Hawaii testing. Instead, using the same adjective phrase employed when forwarding the descriptions of the February lab tests, he simply stated that since DeKalb had obtained "very encouraging" results in maize with the double mutant maize gene it would like permission to also use the gene in soybeans as a selectable marker. (Pl.'s Ex. 310)

That same day, September 7th, DeKalb lawyer Doug Fisher, who also was aware of the Hawaii field test results, wrote his RPA counterpart and encouraged a hastened agreement between DeKalb and RPA in preparation for the settlement with Monsanto regarding Monsanto's alleged infringement of the Comai patents. It had been understood that part of the agreement between DeKalb and RPA would relate to RPA granting certain rights and/or licenses to DeKalb regarding the use of Comai gene constructs. Afterward, Fisher and Flick, in putting together the list of genetic materials to be licensed, included RD-125, a non-Comai construct, when neither of them nor anyone else from DeKalb had informed RPA about the Hawaii tests.

When, during discovery, RPA requested Fisher's notes made contemporaneously with these matters, it was learned they had been destroyed.

When, during his video deposition, Dr. Flick was asked why he had not informed Dr. Freyssinet in the September 7th letter about the Hawaii field trials, he responded that to do so would have required that he write a longer letter. When asked why he could not have written a longer letter, he paused, considered the question, and eventually replied that he really could not think of a reason.

In fact, DeKalb never informed RPA directly about the field success of RD-125. RPA's first indication that DeKalb had achieved positive results beyond the initial lab tests reported in February 1994 was in December 1996. (Def.'s Ex. 82 (Michael Spencer e-mail to Rick DeRose)). Yet, it was not until the Fall of 1997, when Dr. DeRose saw DeKalb's APHIS application for sale of a commercial product, that RPA became aware of DeKalb's commercialization of that material. (Apr. 8, 1999 Tr. [Doc. #484], at 80 (DeRose Test.).)

In addition to the historical facts, the jury was entitled to consider the demeanor of the DeKalb witnesses and their explanation of those historical facts. While it may have been the result of illness or the natural apprehension of a person not accustomed to being video-deposed or, perhaps, some other perfectly innocent reason, Dr. Flick's answers and, especially, his manner of answering questions -- hesitation of response and rapid eye movements back and forth -- most reasonably could have been interpreted as indicative of deception. Dr. Mackey's assertion to the effect that she was ecstatic about the February 1994 RD-125 lab results, but not even excited about the Hawaii field trial results, permissibly could have been

received with skepticism as could her testimony that, at the end of 1994, RPA knew as much about the efficacy of RD-125 transformed corn as did DeKalb.

In sum, the evidence warranted findings that: DeKalb had promised to keep RPA informed of test results and knew RPA was relying on it to do so, especially since the full results of the successful lab tests had been provided; that immediately after learning of the Hawaii results Dr Flick wrote the "soybean" letter -- using the same word "encouraging" as had been used in the February lab report cover letter -- for the purpose of lulling RPA into believing DeKalb was maintaining open communications and that there had been no further positive results so that DeKalb could gain full rights to RD-125 and a huge advantage over other potential competitors.

Again, the elements of actual fraud are: (1) a false representation or concealment of a material fact; (2) that was reasonably calculated to deceive; (3) which was made with the intent to deceive; (4) that did in fact deceive (or reasonably induce reliance); and (5) resulted in injury or damage.

The materiality of the field test results cannot be seriously contested. The test results provided significant evidence that a substantial hurdle to glyphosate resistance had been cleared. For the first time, corn plants grown from seed in the field had demonstrated significant levels of glyphosate resistance. Scientific experts testified that the field results were more meaningful than the greenhouse studies because they more closely approximated real-life conditions. Several RPA

witnesses testified that they would not have recommended entering the 1994 Agreement had they known of the results. Moreover, the fact that, after DeKalb received the results, it immediately began backcrossing the GA21 lines in order to begin the commercialization process supports the conclusion that the test results were material.

In addition to materiality, in order to satisfy the first element of its fraud claim, RPA was required to prove that DeKalb had a duty to disclose the field test results. See Setzer v. Old Republic Life Ins. Co., 257 N.C. 396, 399, 126 S.E.2d 135, 137 (1962) (holding that fraud can be practiced by silence as well as by a positive misrepresentation, if a duty to speak exists). As this Court has noted, "in fraudulent omission cases the obligation imposed on parties is not always . . . easy to ascertain because the scope of the duty to disclose can vary between different situations and jurisdictions." Breeden v. Richmond Community College, 171 F.R.D. 189, 194 n.4 (M.D.N.C. 1997). In North Carolina, a legal duty to disclose material information can arise "from a relation of trust, from confidence, inequality of condition and knowledge, or other attendant circumstances." Setzer, 257 N.C. at 399, 126 S.E.2d at 137 (quoting 23 Am. Jur., Fraud & Deceit, § 77). Although there is no fiduciary relationship in the instant case, (see discussion supra Part III(A)(i); Mem. Op. [Doc. #327], at 9-18), there are other "attendant circumstances" that support the jury's conclusion that DeKalb had a duty to disclose the field test results to RPA.

DeKalb had promised disclosure in order to obtain permission to conduct research with the double mutant maize gene and knew that RPA had reason to expect that, because of that promise, it would be fully informed of significant test results. It is in the context of that relationship and that expectation that Dr. Flick's September 7, 1994 fax to Dr. Freyssinet must be examined with regard to its timing -- one day after receiving word of the Hawaii tests, its wording -- referring to the double mutant maize gene only in the same general terms used after the February lab tests, and, most notably, its lack of any mention of the Hawaii tests -- which Dr. Flick himself described (Tr. April 13, 1999, p. 14) as one of the most significant occurrences in DeKalb's glyphosate resistance project, a project which at that time was at least nine years old. In this context, Dr. Flick's letter reasonably could be considered a "partial or ambiguous" statement that imposed upon DeKalb a duty to disclose the field test results.[16] Such a duty would arise from a

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[16]The Restatement (Second) of Torts provides in pertinent part that: (1) One who fails to disclose to another a fact that he knows may justifiably induce the other to act or refrain from acting in a business transaction is subject to the same liability to the other as though he had represented the nonexistence of the matter that he has failed to disclose, if, but only if, he is under a duty to the other to exercise resonable care to disclose the matter in question. (2) One party to a business transaction is under a duty to exercise reasonable care to disclose to the other before the transaction is consummated, ...(b) matters known to him that he knows to be necessary to prevent his partial or ambiguous statment of the facts from being misleading; and...(e) facts basic to the transaction, if he knows that the other is about to enter into it under a mistake as to them, and that the other, because of the relationship between them, the customs of the trade or other objective circumstances, would reasonably expect a disclosure

common-law duty to correct misleading statements.[17] See Ragsdale v. Kennedy, 286 N.C. 130, 139, 209 S.E.2d 494, 501 (1974) ("[E]ven though a vendor may have no duty to speak under the circumstances, nevertheless if he does assume to speak he must make a full and fair disclosure as to the matters he discusses."); Shaver v. N.C. Monroe Constr. Co., 63 N.C. App. 605, 614-15, 306 S.E.2d 519, 525 (1983) (holding that, after a letter to employees impliedly represented that contributions were being made to a pension plan and after an employee was told that the plan was still "intact," the employer could have a duty to disclose the full truth that the plan had been terminated).

Similar and in addition to the rule involving a partial or ambiguous statement, a duty to disclose arises when a party has taken affirmative steps to conceal material facts. See Harton v. Harton, 81 N.C. App. 295, 297-98, 344 S.E. 2d 117, 119 (1986). As one authority provides:

> It is a basic principle in the law of fraud in respect of the effect of nondisclosure that the proposition that in the absence of a duty to speak, nondisclosure is not fraudulent, presupposes mere silence, and is not applicable where, by words or conduct, a false representation is

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of those facts.
Restatement (Second) of Torts § 551 (1977).

[17] Other instances in which a legal duty to disclose may arise are: (1) where a fiduciary relationship exists between the parties to the transaction; and, outside of a fiduciary relationship in which the parties are dealing at arm's length, (2) where a party has taken affirmative steps to conceal material facts from the other and (3) where one party has knowledge of a latent defect in the subject matter of the negotiations about which the other party is both ignorant and unable to discover through reasonable diligence. See Harton v. Harton, 81 N.C. App. 295, 297-98, 344 S.E.2d 117, 119 (1986).

> intimated or any deceit practiced. Moreover, the rule that fraud cannot be predicated on a failure to disclose facts where the information is as accessible to one party as to the other, and where the truth may be ascertained by the exercise of reasonable diligence, does not justify a resort to active deceit or fraud, and hence does not apply where a party, in addition to nondisclosure, uses any artifice to throw the other party off his guard and to lull him into a false security. Therefore, each party to a contract must take care not to say or do anything tending to impose upon the other.
>
> Concealment becomes a fraud where it is effected by misleading and deceptive talk, acts, or conduct, where it is accompanied by misrepresentations, or where, in addition to a party's silence there is any statement, word, or act on his part which tends affirmatively to a suppression of the truth, to a covering up or disguising of the truth, or to a withdrawal or distraction of a party's attention from the real facts; then the line is overstepped, and the concealment becomes a fraud. Such conduct is designated "active concealment," and it produces the same result in law as positive misrepresentation. Likewise, resort to any trick or artifice to prevent an adversary from discovering the truth is equivalent to active misrepresentation.

37 Am. Jur. 2d Fraud and Deceit §174(C) (1968).

The September 7 fax cannot be isolated from the rest of the circumstances and read independently to determine whether it was misleading or ambiguous. When placed in the context of the entire course of dealings between DeKalb and RPA and the reasonable expectations of RPA, the fax would be understood to say: "As you know, we've had some success in the lab with the double mutant gene in corn and would also like to use it in the lab as a selectable marker in soybeans, and, by the way, as you can see, we are staying in touch regarding what is going on with the gene." A reasonable jury could conclude that RPA was "deprived [of the truth] to the same extent that [it] would have been by positive assertion." Id. And, even more, the jury could conclude that the letter actually was written for the

deceptive purpose of lulling RPA into believing that success had not passed beyond the laboratory and that DeKalb was maintaining full and open communications about RD-125.

Finally, RPA was in fact deceived about the worth of RD-125, as evidenced by RPA's agreement to include it in the 1994 Agreement for, arguably, no consideration other than that already bargained for pertaining to the unsuccessful Comai gene. That this deception caused significant economic injury to RPA cannot be disputed given the value in the market of the first commercially feasible, glyphosate resistant corn seed. (Apr. 13, 1999 Tr. [Doc. #487] at 191-92 (Bokhart Test.).)

The evidence, viewed in the light most favorable to RPA, demonstrated that substantial evidence existed to support the jury's verdict regarding RPA's fraudulent inducement claim against DeKalb. Therefore, DeKalb's Motion for Judgment as a Matter of Law on this claim is DENIED.

III (A) (iii)

In the complaint RPA asserted DeKalb's breach of the agreement to keep it advised of testing results, not as an independant claim for breach of contract, but as it related to recission of the 1994 settlement agreement. The issues of whether there had been such an agreement as the condition for transfer of the double mutant maize gene and whether there had been a breach of that agreement were specifically tried -- addressed in pre-trial motions, briefs, and argument, in opening

statements at trial, by evidence, in closing arguments, by instructions to the jury, and by jury findings. Under Rule 15(b), the Court amends the pleadings in this matter to include a claim by RPA against DeKalb for breach of contract. The pleadings will then conform to the evidence as well as to the jury's verdict, which determined that DeKalb materially breached a contractual duty to RPA by disclosing the results of the field tests.

Federal Rule of Civil Procedure 15(b) provides:

> (b) Amendments to Conform to the Evidence. When issues not raised by the pleadings are tried by express or implied consent of the parties, they shall be treated in all respects as if they had been raised in the pleadings. Such amendment of the pleadings as may be necessary to cause them to conform to the evidence and to raise these issues may be made upon motion of any party at any time, even after judgment; but failure so to amend does not affect the result of the trial of these issues. If evidence is objected to at the trial on the ground that it is not within the issues made by the pleadings, the court may allow the pleadings to be amended and shall do so freely when the presentation of the merits of the action will be subserved thereby and the objecting party fails to satisfy the court that the admission of such evidence would prejudice the party in maintaining the party's action or defense upon the merits. The court may grant a continuance to enable the objecting party to meet such evidence.

An amendment to conform to evidence may be made at any time, so long as the opposing party has not been prejudiced in presenting his case. See 3 J. Moore, Federal Practice ¶ 15.13[2], at 15-157 to 15-168 (2d ed. 1984) (cited in Brandon v. Holt, 469 U.S. 464, 471 n.19 (1985)). The Rule is "intended to promote the objective of deciding cases on their merits rather than in terms of the relative pleading skills of counsel," and therefore it should be interpreted liberally. 6 C.

Wright & A. Miller, Federal Practice and Procedure § 1491, pp. 453, 454 (1971 ed. and Supp.1983) (cited in Brandon, 469 U.S. at 471 n.19). Finally, the Rule is

> designed to allow amendment of a pleading when the facts proven at trial differ from those alleged in the complaint, and thus support a cause of action that the claimant did not plead. Because notice to the defendant of the allegations to be proven is essential to sustaining a cause of action, Rule 15(b) applies only when the defendant has consented to trial of the non-pled factual issues and will not be prejudiced by amendment of the pleadings to include them.

Gilbane Building Co. v. Federal Reserve Bank of Richmond, 80 F.3d 895, 901 (4th Cir. 1996).

From the beginning of the trial,[18] the Court assumed that the first trial would cover two claims that the Defendants had a duty to disclose the field trial results: one duty under a fraud context and one contractual duty. In discussing a proposed statement to potential jurors on the first day the parties gathered to discuss pretrial motions before the first trial, the Court stated that it was concerned about the Defendants' proposal because "it mentions only the fraud claim and there are contract claims involved." (Apr. 5, 1999 Tr. [Doc. #481], at 4.) The Court then mentioned to the potential jurors that part of the jury's job in the case would be to determine "[e]xactly what [the] understanding was by which Rhone-Poulenc gave [the gene] to DeKalb . . . ." (Id. at 19; see also id. at 21.) DeKalb acknowledged

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[18] Admittedly, in its summary judgment Memorandum Opinion, the Court fell into the same trap as RPA by discussing the contractual duty to disclose as a means to satisfy the first element of the fraud claim. (Mem. Op. [Doc. #327], at 21-22.)

the contract issues before trial as well. When discussing the appropriate law to apply to the various claims, counsel for DeKalb stated that the "central allegation on which RPA seeks to rescind the 1994 agreement is the claim that DeKalb had duties under the 1991 agreement, contractual duties and fiduciary duties." (Id. at 95-96; see also id. at 96 ("What the obligations were, fiduciary or contractual, is going to be the core issue in [RPA's] rescission count."); id. at 97 ("We think that Illinois law should also control the issue of whether -- what the parties' duties were under that contract.").) Moreover, one of the Defendants' motions in limine being discussed at that hearing involved the Defendants' attempt to exclude evidence relating to RPA's claim that DeKalb breached either the 1991 Agreement or separate oral agreement, which the Court denied. (Joint Mot. [Doc. #295]; Apr. 5, 1999 Tr. [Doc. #481], at 188-93.) Importantly, this motion did not involve any claim that RPA never asserted a breach of contract claim in its Complaint; rather it involved the Defendants' assertion that RPA had not provided sufficient evidence regarding the claim.

Therefore, all of the parties entered the trial knowing that the pivotal issues were whether DeKalb had agreed to disclose test results in return for receiving non-Comai genetic materials including RD-125 and, if so, whether that agreement was breached. DeKalb offered evidence on each issue, and argued to the jury that if there were an agreement to disclose, it had been fulfilled. (Apr. 7, 1999 Tr. [Doc. #483], at 9, 10, 17-20, 54, 60; Apr. 9, 1999 Tr. [Doc. #485], passim; Apr. 10,

1999 Tr. [Doc. #486], passim; Apr. 19, 1999 Tr. [Doc. #491], at 193; Apr. 20, 1999 Tr. [Doc. #492], at 42-43, 108, 116, 128; DeKalb's Proposed Jury Instructions [Doc. #357], at 17.) The jury was presented specific questions regarding whether there had been an agreement and, if so, whether it had been breached. (Issue Sheet [Doc. #361], at 1-2.) Substantial evidence supported a jury finding that DeKalb breached a contractual duty to disclose the field test results. Under Rule 15(b), the Court will allow the pleadings to be amended, because RPA's breach of contract claims were presented and tried as separate claims from RPA's fraud claim, with the consent of both parties.

III (A) (iv)

Given the jury's finding that DeKalb fraudulently induced RPA to enter the 1994 Agreement by not disclosing the results of the field tests, the Court will ORDER that the 1994 Agreement be RESCINDED. Therefore, the parties are returned to their respective positions prior to the signing of the 1994 Agreement.

III (B)

The next issue is whether DeKalb should have been allowed to argue to the second jury that it had a license to the OTP and to RD-125, even though the 1994 Agreement was rescinded by the first jury's finding of fraud and all relevant evidence pertaining to the transfer of RD-125 had been presented to the first jury. After the jury verdict in the first trial (fraud), and during pretrial discussions just prior to beginning the second trial (patent infringement and trade secret

misappropriation), DeKalb asserted that if the 1994 Agreement were rescinded, it had a license to commercialize both the OTP and RD-125 under the 1985/1991 Agreements, as modified by the parties through their conduct. DeKalb based this assertion on the first jury's finding that the agreement by which the RD-125 was transferred was formed through, among other things, "the conduct of the parties as a modification of the 1985/1991 written agreements." (Issue Sheet [Doc. #361], at 2 (Question 1(C)).) Therefore, DeKalb argued, it had a defense to both the trade secret misappropriation and the patent infringement claims in the second phase of the trial. At the very least, according to DeKalb, whether the parties modified the 1985/1991 Agreements to include commercialization rights and royalty obligations to RD-125 was a question of fact for the second jury to consider.[19]

III (B) (i)

DeKalb's argument misconstrues, among other things, the procedural history of the bifurcation order that was issued -- upon DeKalb's motion and against the wishes of RPA -- prior to the start of trial. Pursuant to that order, any issue regarding DeKalb's potential licenses to this technology should have been adjudicated during the first trial. On February 16, 1999, this Court granted a joint motion from DeKalb and Monsanto to "bifurcate RPA's contract and licensing

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[19] The Court ruled separately that the 1985/1991 Agreements, on their face, did not include rights to the RD-125 construct. (Apr. 19, 1999 Tr. [Doc. #491], at 199.) Therefore, DeKalb must claim that license rights are granted by a modification of the parties to these agreements.

claims from RPA's remaining claims." (Mem. Supp. Joint Mot. Bifurcate [Doc. #149], at 12.) The intent and logic of the bifurcation order was clear: in order to avoid the complicated issues of patent law and to promote judicial economy, a jury first would determine whether the Defendants had a license to the technology and, if so, the scope of that license. If the Defendants prevailed in the first phase or trial, a second would be unnecessary, since a license would be a complete defense to the remaining claims. A second jury would determine the rest of the claims only if RPA prevailed before the first.

It was the clear understanding of the parties -- and the entire point of bifurcating the trial -- that all aspects of the contractual relationships among RPA, DeKalb, and Monsanto would be adjudicated during the first trial. As the Defendants pointed out then, "[o]nly if RPA succeeds in its effort to overturn defendants' licenses will the Court have to address the other aspects of RPA's claims, including its patent claims, defendants' patent defenses, and damages." (Mem. Supp. Joint Mot. Bifurcate [Doc. #149], at 3.) DeKalb stated that the first phase would "focus on the negotiation of the relevant contracts and the parties' courses of dealing under them." (Mem. Supp. Joint Mot. to Bifurcate [Doc. #149], at 3; see also Def.'s Reply Mem. [Doc. #174], at 3.; Feb. 16, 1999 Tr. [Doc. #259], at 46 ("[T]he Court and the jury needs [sic] to resolve these contract relationship issues between DeKalb\Calgene, DeKalb\RPA, and the settlement in 1994 of the first lawsuit that RPA brought against Monsanto before you get to any

patent issues.").) Moreover, DeKalb's motion to bifurcate was made with full knowledge that part of its "contract and license" claim would require a determination of whether DeKalb had a commercial license under a modified version of the 1985/1991 Agreements, should the 1994 Agreement be rescinded. (Mem. Supp. Joint Mot. to Bifurcate [Doc. #149], at n.2; Def.'s Reply Mem. [Doc. #174], at 4 (stating that the dispute in first phase "centers on DeKalb's rights to the [technology] under both the 1994 Agreement and earlier agreements"); Feb. 16, 1999 Tr. [Doc. #259], at 44-46.) RPA also was clear in its assertion that if the 1994 Agreement were rescinded, it believed that DeKalb would not have any rights to the disputed technology. (Feb. 16, 1999 Tr. [Doc. #259], at 20, 26; Apr. 14, 1999 Tr. [Doc. #488], at 119.) Therefore, without a doubt, DeKalb understood that by bifurcating the trial, all of the licensing issues were to be resolved in the first phase of the trial. (Def.'s Reply Mem. [Doc. #174], at 6 ("[O]f course, if defendants prevail on the licensing issue, there will be no need to try the patent issues at all."); Feb. 16, 1999 Tr. [Doc. #259], at 52 ("[I]f it is determined . . . in the contract case that Monsanto and DeKalb are licensed, you really don't have to deal with these [patent issues]. The issues only arise if it is determined that we are not licensed.").) The determination of the contractual arrangement by which the technology was transferred was the entire purpose of the first phase or trial, which DeKalb itself repeatedly made clear in its arguments to the Court.

Now, however, DeKalb attempts to avoid the consequences of its own

success in bifurcating the trial. DeKalb asserts that, because the Court allowed the trade secret misappropriation claim to be moved from the first to the second trial, DeKalb "had no obligation to establish their licensing defense in the first trial." (DeKalb's Br. Opp. to RPA's Mot. Entry of J. [Doc. #402], at 2.) According to DeKalb, it would be "nonsense" and "preposterous" for DeKalb to be required "to present a license defense in response to RPA's claim for fraudulent inducement which was the sole claim at issue in the first trial." (DeKalb's Br. Opp. to RPA's Mot. Entry of J. [Doc. #402], at 2, 4.) The contrary is true, however; it would have constituted a compelling defense to the fraud claim. A jury determining that DeKalb had acquired a license to commercialize RD-125 through the 1985/1991 Agreements would find it difficult (1) to conclude that DeKalb had a motive to defraud RPA about something to which it already had obtained commercialization rights and (2) to conclude that RPA could establish the required element of injurious reliance since RPA could not have been fraudulently deprived of a construct by a party to whom it had already given commercialization rights.

Further, the postponement of the trade secret misappropriation claim to the second phase of the trial did nothing to alter the structure of the two trials. From the very beginning of the first phase, the parties understood that contract and fraud claims would be adjudicated. See discussion supra Part III(A)(iii). Indeed, trade secret misappropriation instructions were not even included in the jury's preliminary instructions, because the Court understood RPA to state that the misappropriation

claim was subsumed by the fraud claim. (Apr. 5, 1999 Tr. [Doc. #481], at 264-65; Apr. 14, 1999 Tr. [Doc. #488], at 117-18.) Moreover, during the discussion of whether the misappropriation claim should be postponed, DeKalb affirmed that, if RPA prevailed on either the contract or fraud issues against DeKalb, "that would take care of any question of trade secret appropriation with regard to DeKalb." (Apr. 14, 1999 Tr. [Doc. #488], at 118.) Furthermore, no objection was raised by DeKalb when the decision to postpone the misappropriation claim was discussed, nor in response to RPA's statement that:

> Your Honor, we are all agreed, I think, both sides of the aisle and Your Honor that the key is the contract. On behalf of RPA we would not mind pushing off the entire trade secret issue to the patent case and let the jury here decide the contract case. The contract case, as your Honor has ruled in your prior order, will determine whether Monsanto and DeKalb have rights. If they have the rights that ends the case. If they do not have the rights, I think Your Honor indicated the judgment can be against DeKalb in this action.

(Apr. 14, 1999 Tr. [Doc. #488], at 119-25.)

Finally, DeKalb states that, in the first phase of the trial, it was prevented from presenting evidence in defense of its trade secret claim after that claim was postponed. (DeKalb's Br. Opp. RPA's Mot. Entry J. [Doc. #402], at 3.) Again, DeKalb misconstrues the record. DeKalb was prevented from presenting evidence relating to whether and when the technology was a trade secret -- not whether DeKalb had a license to it under either the 1994 Agreement or a modification of the 1985/1991 Agreements. (Apr. 19, 1999 Tr. [Doc. #491], at 168.)

In sum, the postponement of the misappropriation claim did not relieve

DeKalb of its obligation to demonstrate that it acquired the technology properly, through either the 1994 Agreement or a modification of the 1985/1991 Agreements. As recognized throughout the trial, by both parties and the Court, the first trial would determine each of the parties' rights regarding the technology. Therefore, the second would be necessary only if it was determined that DeKalb had no commercialization rights to the technology. The argument that DeKalb now presents, if accepted, would give DeKalb two opportunities to argue before different juries whether – from the same evidence – there had been an agreement and, if so, what its terms had been. Such a result would nullify the effect of DeKalb's own bifurcation motion by repeating the production in the second trial of substantially the same evidence that was submitted in the first phase and, also, giving DeKalb the opportunity to argue as it did in the first that there had been no agreement and, upon losing that, to argue before the second what the nature of the agreement had been. Such a result would, then, allow DeKalb not only to relitigate the contract issue, but to do so the second time before a jury which had heard nothing of misrepresentations nor seen witness demeanor which could affect credibility determinations.

Since DeKalb substantively bases its argument that it had commercialization rights upon the first jury's finding that the agreement for the transfer of RD-125 was a "modification of the 1985/1991 Agreements", the Court will examine the evidence presented to determine whether it was sufficient to support a finding that

DeKalb obtained a license to commercialize RD-125 under the 1985/1991 Agreements.

III (B) (ii)

Contract modification must satisfy all the requirements of a valid contract, including the requirement of consideration. See Bass v. Prime Cable of Chicago, Inc., 284 Ill. App. 3d 116, 126, 674 N.E.2d 43, 51, 220 Ill. Dec. 772, 780 (1996). "A modification of a contract may be ratified by acquiescence in a course of conduct consistent with the existence of that modification." Corrugated Metals, Inc. v. Industrial Comm'n, 184 Ill. App. 3d 549, 556, 132 Ill. Dec. 739, 744, 540 N.E.2d 479, 484 (1989).

DeKalb has the burden of proving that a modification occurred. See Boardman v. Bubert, 325 Ill. 38, 41, 155 N.E. 784, 786 (1927). Whether a contract has been modified is ordinarily question of fact; however, the sufficiency of facts presented to constitute a modification is a question of law. See Martz v. MacMurray College, 255 Ill. App. 3d 749, 753, 627 N.E.2d 1133, 1135, 194 Ill. Dec. 491, 493 (1993). Moreover, if after consideration of all evidence, the court determines that reasonable people could reach only one conclusion, the modification issue can be decided by the court as a matter of law. See E.A. Cox Co. v. Road Savers Int'l Corp., 271 Ill. App. 3d 144, 152, 648 N.E.2d 271, 277-78, 207 Ill. Dec. 815, 821-22 (1995).

The 1985 Agreement contains a clause declaring that it "may be amended

only by a writing signed by both parties." (Pl.'s Ex. 2, Art. 8.3, at 17.) However, DeKalb is not precluded by Article 8.3 from claiming that the Agreement was modified by the conduct of the parties because, in Illinois,[20] "the terms of a written contract can be modified by a subsequent oral agreement even though . . . the contract precludes oral modifications." Tadros v. Kuzmak, 277 Ill. App. 3d 301, 312, 660 N.E.2d 162, 170, 213 Ill. Dec. 905, 913 (1995).

The 1985 Agreement recognized that Calgene (and RPA) would engage in future development and that neither party would be bound to a license agreement for future technology based on the 1985 Agreement. In Article 8.1, Calgene (and then RPA) agreed to notify DeKalb of any future development which "may have practical application to the transformation, regulation or expression of useful genes in corn . . . for the sole purpose of permitting [DeKalb] to indicate an interest in acquiring such developments by license or otherwise." (Pl.'s Ex. 2, Art. 8.1, at 16.) Moreover, in the first meeting between DeKalb and RPA after the 1991 Agreement. the final version of the minutes noted that

> [t]here was some discussion regarding the regulatory environment for transgenic plants and also potential legal entanglements regarding technology for which patents might issue in the future. Since it is highly unlikely that our first transformants will lead to commercialization, we decided to let scientific issues drive our decisions rather than patent and regulatory issues. Thus, our primary objective is to test expression of aroA (CT7) in maize plants using the

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[20] The law of Illinois will be used to determine the requirements for a modification of the 1985/1991 Agreements because those agreements contain a choice of law clause designating Illinois law. (Pl.'s Ex. 2, Art. 8.9, at 19.)

best technology available.

(Pl.'s Ex. 43, Minutes, June 17, 1991 Rhone Poulenc/DEKALB Plant Genetics Meeting, at DKB 040792.) The parties protected themselves from this decision to postpone determination of rights to technology other than the CT-7 by also agreeing that all materials exchanged between the parties would be covered by the 1984 Confidentiality Agreement. (Id. at DKB 040790.) The only reasonable conclusion from this is that, prior to the June 17, 1991 meeting, the parties had not agreed to expand the commercialization and royalty aspects of the 1985/1991 Agreements to materials other than the CT-7.

Among the post-1991 evidence to which DeKalb turns for support are RPA documents in which RPA scientists discuss the double mutant maize gene in the same documents as the CT-7 gene, (see, e.g., Def.'s Ex. 401; 470), or in which RPA scientists discuss the EPSPS gene as being within "the framework of the DEKALB contract," (Def.'s Ex. 391). Also, in an internal report, RPA scientists discussed its evaluation of the mutated maize gene under the heading "DeKalb Agreement." (Def.'s Ex. 420, at RPA 023092-93.) Yet, these references are isolated labels and classifications by RPA's scientists -- they do not reasonably suggest that RPA meant to provide DeKalb with full commercialization rights under an agreement limited on its face to the CT-7 gene. There is no question that, as discussed, the 1985/1991 Agreements provided a framework to accomodate non-CT-7 (non-Comai) genetic materials exchanged between Calgene/RPA and DeKalb

but DeKalb has pointed to nothing within the Agreements which would support a reading that a transfer of that material would give DeKalb a license to commercialize a product containing that material. Neither did DeKalb adduce evidence that anyone discussed such an agreement or comported themselves in such a way as to infer such an agreement pertaining to RD-125. DeKalb's conclusions rely on unsubstantiated conjecture about the intent of the parties to transfer commercialization rights, rather than on evidence that RPA agreed to give DeKalb such a sweeping license to RD-125.

DeKalb further points to documents, created after the November 1992 meeting, in which RPA refers to providing the double mutant gene pursuant to a "contractuel [sic] commitment" to DeKalb. (Br. Opp. RPA's Mot. Entry J. [Doc. #402], at 7 (citing Def.'s Ex. 14, at RPA 016128); see also Def.'s Ex. 490, at RPA 016136; Def.'s Ex. 31, at RPA 016146; Def.'s Ex. 40.) However, rather than shedding any light on whether the contractual commitment included commercialization rights and royalty responsibilities, these documents simply support the jury's verdict that an oral agreement was made on November 2, 1992 in which RPA would provide RD-125 to DeKalb in exchange for results of testing.

Finally, DeKalb contrasts the lack of written agreement for the transfer of RD-125 with Dr. Mackey's testimony that RPA was "fastidious" about requiring written agreements for the transfer of genetic material, (Br. Opp. RPA's Mot. Entry J. [Doc. #402], at 7 (citing Apr. 14, 1999 Tr. [Doc. #488], at 186)), and

documentary evidence that Dr. Freyssinet required written agreements for other materials it transferred that were not related to glyphosate tolerance, (id. at 7 (citing Def.'s Ex. 27; Def.'s Ex. 523)). This argument has no force, however, since RD-125 did relate to glyphosate tolerance and was protected by the 1984 Confidentiality Agreement. There would have been no need for an additional written agreement. (Apr. 12, 1999 Tr. [Doc. #486], at 135-38; Pl.'s Ex. 43, Minutes, June 17, 1991 Rhone Poulenc/DEKALB Plant Genetics Meeting, at DKB 040792.)

In sum, from the evidence in the first trial, a reasonable juror could conclude only that, in 1991, RPA assumed an agreement that specifically contemplated that further technological development would not be included within the commercial licenses granted under the 1985/1991 Agreements. (Pl.'s Ex. 2, Art. 8.1, at 16.) This agreement incorporated the 1984 Confidentiality Agreement, which specifically did not include commercialization rights. (Id. Art. 8.3, at 17; Pl.'s Ex. 1, 1984 Confidentiality Agreement, ¶ 4.) Furthermore, at the first meeting between RPA and DeKalb, the parties specifically engaged in a broad collaboration based upon finding glyphosate tolerance in corn, postponed dealing with legal, regulatory, and patent issues, and adopted the 1984 Confidentiality Agreement. (Pl.'s Ex. 43, Minutes, June 17, 1991 Rhone Poulenc/DEKALB Plant Genetics Meeting, at DKB 040792.) This intent to postpone agreement regarding commercialization and royalties of technology other than CT-7 cannot be

undermined by vague references from scientists regarding "contractuel [sic] commitments." Rather, DeKalb needed to present evidence that RPA and DeKalb had a meeting of the minds regarding a license to commercialize the double mutant maize gene. It did not. There is simply no evidence upon which a reasonable jury could conclude that the parties understood and agreed that the 1985/1991 Agreements had been modified to the extent that DeKalb was given a license to commercialize RD-125.

The jury's verdict response to Question 1(C) must be read with this conclusion in mind. Question One of the Issue Sheet asked, "Has RPA proven by a preponderance of the evidence that DeKalb agreed to provide RPA with the results of its testing in return for receiving the double mutant maize EPSPS genes?" After the jury's affirmative response, the jury was asked three questions regarding how the agreement was formed. The jury answered that the agreement was formed (A) orally at the November 1992 meeting in Mystic, Connecticut, (B) through the conduct of RPA and DeKalb at or following the Mystic meeting in November 1992, and (C), through the conduct of the parties as a modification of the 1985/1991 written agreements. Given that no evidence was presented such that a reasonable jury could conclude the modification mentioned in (C) would include commercialization rights, the jury's answer can mean only that the modification was DeKalb's agreement to provide RPA with the results of its testing in return for receiving the double mutant maize EPSPS genes. Moreover, this interpretation is

the more natural reading of the Issue Sheet, because the "agreement" mentioned in 1(C) initially was defined as such in Question 1. Furthermore, DeKalb's license argument completely ignores the jury's response to Questions 1(A) and 1(B); whereas the Court's reading of the Issue Sheet and the evidence allows for consistency among the jury's answers. Finally, the answer in Question 1(C) is supported by Illinois law, which allows parties to a contract to modify provisions of the contract without affecting their liabilities under other terms of the agreement. See Deien Chevrolet, Inc. v. Reynolds and Reynolds Co., 265 Ill. App. 3d 842, 845, 639 N.E.2d 949, 952, 203 Ill. Dec.390, 393 (1994). In other words, RPA and DeKalb could modify a contract relating to the CT-7 gene by adding a separate agreement with different obligations regarding the double mutant maize gene.

III (B) (iii)

In conclusion, DeKalb was required to present all of its evidence relating to potential licenses to the technology in the first trial. After examining all of the evidence in the light most favorable to DeKalb, it is determined that no reasonable jury could find that DeKalb possessed the right to commercialize the RD-125 technology under a modified version of the 1985/1991 Agreements.

III (C)

The Court dismissed Monsanto from the second trial because Monsanto is a bona fide purchaser of the RD-125 technology, and therefore cannot be liable as a

patent infringer or a trade secret misappropriater.[21] The following brief summary of facts will supplement the facts set forth supra,[22] and will provide context for the Court's resolution of this issue.

III (C) (i)

In the 1994 Agreement, RPA and Calgene granted DeKalb the nonexclusive right to use and to sublicense various technologies and genetic materials. Section 4.1 of that agreement reads as follows:

> 4.1 RPA and CALGENE hereby grant to DeKalb the world-wide, paid-up right to use the RPA/CALGENE Technology and RPA/CALGENE Genetic Material in the field of use of corn. DeKalb shall have the right to grant sublicenses to the aforementioned right to use without further payment being made to RPA and CALGENE.

(Pl.'s Ex. 4, 1994 Agreement § 4.1, at 5.) The terms "RPA/CALGENE Technology" and "RPA/CALGENE Genetic Material" are defined in Sections 1.6 and 1.7, respectively, and it is undisputed that the terms include both the double mutant maize gene and the OTP at issue in the second phase of the trial.

In 1996, DeKalb entered into a licensing agreement ("1996 Agreement") with Monsanto in which DeKalb stated that it had "certain rights relating to Genetic Element(s), Germplasm, Plasmid(s) and Gene(s), including technical information and Know-How relating to, among other things, transformed plants and seeds, useful

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[21] Monsanto made two motions on this issue: a motion for Judgment as a Matter of Law on the patent and misappropriation claims [Doc. #355] and a motion for summary judgment under Fed. R. Civ. P. 56 [Doc. #394].

[22] See discussion supra Part I.

for Glyphosate protection in corn plants." (1996 Agreement § 1.04.) DeKalb granted to Monsanto "a royalty-bearing, non-exclusive, license under the Licensed DEKALB Patent Rights, DEKALB Know-How, Licensed DEKALB Methods and Licensed DEKALB Non-patent Proprietary Materials, (a) to make, have made, and use Licensed MONSANTO Corn Products . . ., and (b) to sublicense . . . to make, have made, use and sell Licensed MONSANTO Corn Products." (Id. § 3.10.) Monsanto cross-licensed to DeKalb other technology in return. It is undisputed that among the materials DeKalb licensed to Monsanto through the 1996 Agreement was the same construct -- RD-125 -- that RPA and Calgene licensed to DeKalb through the 1994 Agreement.

DeKalb and Monsanto, under the auspices of the 1996 Agreement, developed and commercialized the GA21 corn line by utilizing RD-125, among other things. Again, this GA21 corn line became what is now sold as Roundup Ready corn.

At a motions hearing on April 26, 1999, both Monsanto and DeKalb admitted that their use of the OTP in Roundup Ready corn infringed United States Patent 5,510,471 ("'471 patent"). Moreover, RPA claimed that Monsanto's and DeKalb's commercialization of RD-125 resulted in misappropriation of RPA's trade secrets.

Monsanto asserted several defenses to both the patent and the misappropriation claims; however, only one defense was decided upon by the

Court.[23] Monsanto asserted that, even though the Court rescinded the 1994 license that forms the basis for its sublicense under the 1996 Agreement, Monsanto should not be liable for patent infringement or for misappropriation because it was a bona fide purchaser of the license for value without notice of DeKalb's wrongdoing. (Br. Supp. Def. Mot. Pursuant to F.R.C.P. 56 [Doc. #395], at 13-19; Br. Supp. Def. Mot. Judgment Matter L. [Doc. #356], at 5-10.)

III (C) (ii)

The bona fide purchaser rule is recognized in patent law, see Filmtec Corp. v. Allied-Signal, Inc., 939 F.2d 1568, 1573-74 (Fed. Cir. 1991), as well as by North Carolina, through the common law, see Wilson v. Commercial Fin. Co., 239 N.C. 349, 356, 79 S.E.2d 908, 914 (1954), and by its adoption of the Uniform Commercial Code, see N.C. Gen. Stat. § 25-2-403. As noted by the Federal Circuit, "[i]t is well established that when a legal title holder of a patent transfers his or her title to a third party purchaser for value without notice of an outstanding equitable claim or title, the purchaser takes the entire ownership of the patent, free of any prior equitable encumbrance." Filmtec, 939 F.2d at 1573 (applying common law bona fide purchaser rule). Moreover, the Federal Circuit recently affirmed the use of the bona fide purchaser defense in Heidelberg Harris, Inc. v. Loebach, 145

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[23] As the Court finds that Monsanto is entitled to protection as a bona fide purchaser from RPA's claims of patent infringement and misappropriation, the Court will not address Monsanto's alternative arguments for dismissal. (Br. Supp. Def. Mot. Pursuant to F.R.C.P. 56 [Doc. #395], at 13.)

F.3d 1454, 1458 (Fed. Cir. 1998). In that case, an inventor assigned all rights in his invention to an assignee, who later obtained a patent on the invention and then granted an unrestricted, exclusive license to that patent to a third party. See id. at 1456-57. Although the original assignment from the inventor to the assignee was later rescinded due to fraud, the Federal Circuit held that the third party was not liable for patent infringement because it retained its exclusive license under the bona fide purchaser rule. See id. at 1459.

In the instant case, the essential prerequisites for finding that Monsanto is a bona fide purchaser are evident. There has been no suggestion that Monsanto had notice of DeKalb's fraudulent behavior when Monsanto received its license in 1996. Moreover, Monsanto gave value to DeKalb in the form of licenses to certain of its patents and technology in exchange for the license to DeKalb's (and RPA's) technology, including RD-125. Therefore, Monsanto argues that it should be considered a bona fide purchaser under Filmtec and Heidelberg Harris.

However, RPA asserts that this case differs from Filmtec and Heidelberg Harris in that Monsanto, the alleged bona fide purchaser, did not receive its license from the legal title holder of the technology, RPA. Rather, Monsanto received a license to the technology from a nonexclusive licensee that had the right to sublicense. Therefore, according to RPA, as between the two innocent parties here -- RPA and Monsanto -- Monsanto should bear the risk of fraud.

This scenario appears to be a matter of first impression in the law of patents

and of trade secret misappropriation. In order to resolve whether Monsanto should be considered a bona fide purchaser, the Court will turn to the precepts that undergird the bona fide purchaser rule generally, and then apply those precepts to the facts of this case. One of the main considerations behind the bona fide purchaser rule is the "waste that would be created if people either had to inquire how their transferors obtained their property or to accept a risk that a commercial deal would be reversed for no reason they could perceive at the time." Bonded Fin. Servs., Inc. v. European Am. Bank, 838 F.2d 890, 892 (7th Cir. 1988). The bona fide purchaser rule preserves the stability of commercial transactions by promoting the free transferability and negotiability of property in commerce. See, e.g., C.H. Robinson Co. v. B.H. Produce Co., 723 F. Supp. 785, 793 (N.D. Ga. 1989). RPA's position would frustrate this rationale because it would undermine the ability of a licensee to grant sublicenses. Any reasonable party interested in receiving a license for technology virtually would be forced to obtain the license from the patent owner rather than a licensee, even if that licensee had been granted the clear power to grant sublicenses by the technology's owner. Otherwise, the potential sublicensee would bear a continuing risk that the licensee obtained the technology through fraud.

Therefore, it seems more appropriate to place the risk of fraud on the party with the best chance of catching the fraud initially -- the defrauded party. Cf. Sale Chevrolet, Buick, BMW, Inc. v. Peterbilt of Florence, Inc., 514 S.E.2d 747, 749-50

(N.C. Ct. App. 1999). As the Supreme Court has noted, as strong as a defrauded party's claim in equity may be, "it can in no case be stronger than that of a purchaser who has put himself in peril by purchasing a title, and paying a valuable consideration, without notice of any defect in it, or adverse claim to it." United States v. California & O. Land Co., 148 U.S. 31, 41 (1893). Such risk allocation is applicable in this case, even though it is a right to use and to sublicense that was obtained by fraud, rather than actual title to the patent.

Indeed, more important than whether DeKalb was the "legal title holder" of the technology is that Monsanto's sublicense came from a license stating that it had been paid for up-front and was unrestricted. From Monsanto's perspective as an innocent sublicensee, under the grant provided in the 1994 Agreement, Monsanto's license rights could not be taken away by any subsequent action of DeKalb, the licensee, such as nonpayment of royalties. No situation other than fraud would disenfranchise DeKalb from its right to use and to sublicense the technology in the field of use of corn. Because the bona fide purchaser rule serves, in part, to protect innocent purchasers in situations in which fraud is present, Monsanto should not be precluded from relying on the 1994 Agreement's grant to DeKalb, even though DeKalb never received actual title to the technology. Thus, while RPA is correct that DeKalb is not the legal title holder of the technology because it is a nonexclusive licensee, this distinction is not enough to remove Monsanto from being considered a bona fide purchaser.

Therefore, the Court holds that in this case, in which DeKalb's right to use was paid for up-front, unrestricted, and accompanied by a right to sublicense, the sublicensee, Monsanto, is entitled to be considered a bona fide purchaser, because it paid value for the right to use the technology without knowledge of any wrongdoing by DeKalb. Monsanto will be DISMISSED from Counts I and V of RPA's Complaint, and RPA's motion for reconsideration of this ruling [Doc. # 518] is DENIED.

Although it recognizes that the bona fide purchaser in Heidelberg Harris received an indefinite license to the disputed patent, see Heidelberg Harris, 145 F.3d at 1459, the Court here holds that Monsanto is dismissed only from the patent infringement and trade secret misappropriation claims at issue in this case. In other words, the Court makes no finding regarding any future license by Monsanto of the technology at issue here. Moreover, Monsanto apparently has sublicensed RPA's technology to various seed manufacturers, and Monsanto seems also to assert that all of its sublicensees are free from liability to RPA for patent infringement and trade secret misappropriation. While it is true that DeKalb granted Monsanto the right to sublicense the technology in the 1996 Agreement, (1996 Agreement § 3.10), the plain language of the 1994 Agreement may not support the right of DeKalb's sublicensees, such as Monsanto, to grant sublicenses themselves. Therefore, the Court makes no finding regarding continuing use of the

technology by Monsanto's sublicensees either.[24]

III (D)

Next, DeKalb asks that the jury's finding of nonobviousness be set aside and judgment as a matter of law be entered for DeKalb that Claim 11 of the '471 patent is obvious and, thus, invalid. Although the Court cited to general standards for a motion under Fed. R. Civ. P. 50(b) supra, specific criteria, set out below, exist for such a motion when it involves the question of obviousness.

A patent is invalid "if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains." 35 U.S.C. § 103. It is undisputed that the ultimate question of obviousness is a question of law. See Graham v. John Deere Co., 383 U.S. 1, 17 (1966). At the same time, factual issues underlie the ultimate obviousness decision, including "(1) the scope and content of the prior art; (2) the differences between the claimed invention and the prior art; (3) the level of ordinary skill in the art; and (4) certain secondary

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[24] There also is a question whether Monsanto's sublicensees could rely on Section 9.2 of the 1994 Agreement to assert that they are bona fide purchasers. Under Section 9.2, DeKalb could assign its rights under the 1994 Agreement to Monsanto in December 1998, because Monsanto acquired "substantially all of the assets" of DeKalb at that time. (Pl.'s Ex. 4, 1994 Agreement ¶ 9.2, at 8-9.) However, any sublicensee that acquired its rights after December 1998 would have acquired them with knowledge of RPA's equitable claim in this lawsuit, which was filed in 1997. Therefore, the bona fide purchaser rule might not apply.

considerations." Richardson-Vicks Inc. v. Upjohn Co., 122 F.3d 1476, 1479 (Fed. Cir. 1997) (citing Graham, 383 U.S. at 17-18). These factual issues do not convert the ultimate conclusion of obviousness from one of law into one of fact. See id. "Nevertheless, in re-creating the facts as they may have been found by the jury, and in applying the Graham factors to the case, [the Court] assess[es] the record evidence in the light most favorable to the verdict winner," in this case RPA. Id. "Where, as here, there is a verdict of validity, the question is not whether the patentee had introduced sufficiently substantial evidence to support the verdict, but whether the challenger's evidence so met the burden imposed by 35 U.S.C. § 282 ('[t]he burden of establishing invalidity of a patent or any claim shall rest on the party asserting such invalidity') that reasonable jurors could not have concluded that the challenger failed to overcome that burden." Perkin Elmer Corp. v. Computervision Corp., 732 F.2d 888, 893 (Fed. Cir. 1984).

DeKalb asserts that it should be granted judgment as a matter of law because there was no substantial evidence to support the jury's determination of nonobviousness. (Def. Br. Supp. Motion J. Matter L. [Doc. #511], at 5-7.) According to DeKalb, the alleged similarity in structure between the OTP and the prior art "renders the OTP obvious." (Id. at 7.) Because of this structural similarity, DeKalb asserts that RPA was required to present evidence to overcome this obviousness, either in the form of "improved properties" or "superior results." (Id. at 5-11.) Finally, DeKalb claims that RPA did not provide proof of a nexus

between the OTP and any commercial success or long-felt need. (Id. at 11.)

In examining the factual basis for the jury's verdict and in construing DeKalb's arguments against that verdict, the Court remains cognizant of the statutory presumption of validity, see 35 U.S.C. § 282, as well as that "the facts to support a conclusion of invalidity must be proven by clear and convincing evidence." Richardson-Vicks Inc., 122 F.3d at 1480 (quoting Ryko Mfg. Co. v. Nu-Star, Inc., 950 F.2d 714, 716 (Fed. Cir. 1991)) (internal quotation marks omitted). Moreover, the Court is aware that the Federal Circuit has stated that "it is preferred that a jury be provided with special interrogatories designed to reveal more clearly the findings it made." Perkin Elmer Corp., 732 F.2d at 893. However, the jury in this case was not asked to make such factual findings regarding obviousness; rather, the jury was asked to return a general verdict on the question of obviousness. (Verdict Form for Phase I [Doc. #459], at 1.) Therefore, "[a]bsent such interrogatories, the law presumes the existence of findings necessary to support the verdict the jury reached." Perkin Elmer Corp., 732 F.2d at 893. "The particular findings the jury must make before it can reach a verdict are controlled by the court's instructions to the jury." Id. In this case, the jury was instructed in great detail as to the factors it was to consider under Graham, and then it was asked to deliver a general verdict. (Jury Instructions [Doc. #460], at 11-17.) As detailed below, considering the evidence in the light most favorable to RPA, the Court concludes that a reasonable jury could properly have found that DeKalb did

not prove by clear and convincing evidence that the OTP, as described in Claim 11 of the '471 patent, was obvious.

III (D) (i)

It is well-established that the first step in any validity analysis is to construe the claims of the invention to determine the subject matter for which patent protection is sought.[25] See Rockwell Int'l Corp. v. United States, 147 F.3d 1358, 1362 (Fed. Cir. 1998). In general, the patent dispute in the instant case revolves around transit peptides -- strings of amino acids that attach to various genes ("passenger proteins") and, then, transport the genes from the cytoplasm of a plant cell into the plant cell's chloroplast. Claim 11's optimized transit peptide is a genetically constructed version of a natural transit peptide, consisting of

> [a] nucleic acid construct which codes for a polypeptide sufficient for localization of a gene product in a chloroplast of a plant cell which polypeptide comprises a fusion which in the direction of translation comprises a first chloroplast transit peptide from a sunflower ribulose-1,5-bisphosphate carboxylase small subunit, approximately 22 amino acids from the N-terminal region of a mature maize ribulose-1,5-bisphosphate carboxylase small subunit and a second chloroplast transit peptide from a maize ribulose-1,5 bisphosphate carboxylase small subunit.

(Pl.'s Ex. 6.) In simplified terms, the OTP is a specific constructed formation of three genetic elements. The first part consists of a sunflower's natural transit peptide, which is a piece of DNA from a sunflower gene called Rubisco that is fifty-

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[25] The parties here do not dispute the scope of Claim 11 of the '471 patent.

five amino acids long. The second part is the first twenty-two amino acids from the mature portion of the maize Rubisco gene (also called the "N-terminal extension"). The final part is a second natural transit peptide, which is forty-seven amino acids long and from the maize Rubisco gene. (May 17, 1999 Tr. [Doc. #494], at 186-91; May 18, 1999 Tr. [Doc. #495], at 372.) The OTP is to be used for facilitating the transfer of EPSPS genes from a plant cell's cytoplasm to its chloroplast in order to effect glyphosate tolerance. (Pl.'s Ex. 6, at col. 1-2.)

III (D) (ii)

The second step in an obviousness inquiry is to determine whether the claimed invention would have been obvious as a legal matter, based on underlying factual inquiries including: (1) the level of ordinary skill in the art, (2) the scope and content of the prior art, (3) the differences between the claimed invention and the prior art, and (4) secondary considerations of nonobviousness. See Smiths Indus. Med. Sys., Inc. v. Vital Signs, Inc., 183 F.3d 1347, 51 U.S.P.Q.2d. 1415 (Fed. Cir. July 14, 1999).

*Level of Ordinary Skill in the Art*

The parties agreed prior to the trial that a person of ordinary skill in the art is a person having a doctoral degree in molecular biology or a masters degree in molecular biology in addition to a few years of experience in the field of plant molecular biology. (May 28, 1999 Tr. [Doc. #501], at 1950.)

*Scope and Content of the Prior Art*

The prior art to be examined must have been published prior to March 5, 1991, which is the effective filing date for the '471 patent. See 35 U.S.C. § 103 (mandating that obviousness be tested as of "the time the invention was made").

The evidence at trial demonstrated that, prior to 1991, it was well known in the field that introducing some type of EPSPS gene (whether from a bacterium or a plant) into a plant cell's chloroplast may assist in providing glyphosate tolerance in plants. It was also known that a transit peptide was necessary for moving an EPSPS gene, or another protein, into a plant cell's chloroplasts. (Def.'s Ex. 1421 (U.S. Patent No. 4,940,835 ("Shah patent")); May 21, 1999 Tr. [Doc. #533], at 1166.) In nature, once a protein is inside the chloroplast, an enzyme removes the transit peptide, and leaves a "mature" protein. (May 26, 1999 Tr. [Doc. #499], at 1457 (Dewey Test.).)

Calgene's Dr. Luca Comai conducted some of the pioneering work in modifying EPSPS genes to achieve glyphosate resistance once the EPSPS gene is moved into the chloroplast. He worked primarily with an EPSPS gene called the CT-7, which was derived from a bacterium, not a plant. Because bacterial EPSPS genes are not connected to transit peptides naturally, Dr. Comai initially attached to the CT-7 gene a transit peptide from a protein called Rubisco, in order to transport

the CT-7 gene into the plant's chloroplast.[26] However, this simple transit peptide did not move the CT-7 gene into the plant chloroplast very effectively. (Id. at 1458 (Dewey Test.).) As DeKalb's expert, Dr. Ralph Dewey, explained, the chloroplast did not recognize the "foreign" protein (i.e., the bacterial protein) and therefore it did not allow entry into the chloroplast, even though a transit peptide was being used. (Id. at 1459.)

To address this problem, Dr. Comai attached to the original transit peptide a short region of the "mature" portion of the same Rubisco gene, which, as mentioned above, also is called the "N-terminal extension." (Id. at 1459-60.) In a 1988 article published in The Journal of Biological Chemistry, Dr. Comai used an N-terminal extension that was twenty-four amino acids long, and concluded that the extension was necessary for efficient chloroplast transport. (Def.'s Ex. 148, at 15104.) Dr. Dewey explained that the rationale for adding a portion of the mature protein was to "fool" the chloroplast by following the natural transit peptide with a part of a protein that normally belongs in the chloroplast. (May 26, 1999 Tr. [Doc. #499], at 1460.) Therefore, the construct that became known at the trial as the "Comai transit peptide" in the prior art consisted of a natural transit peptide from a sunflower Rubisco gene connected to twenty-four amino acids from a mature

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[26] In nature, corn plants possess EPSPS genes that have their own transit peptides, which are sufficient to move the EPSPS proteins into the chloroplast. (May 26, 1999 Tr. [Doc. #499], at 1457 (Dewey Test.).)

sunflower Rubisco protein.[27] For glyphosate resistance, this construct was then followed by the CT-7 bacterial gene. The Comai transit peptide, which was the cumulative result of Dr. Comai's research as published in patents, (Def.'s Exs. 131 (U.S. Patent No. 4,535,060), 160 (U.S. Patent No. 4,769,061)), a patent application (Def.'s Ex. 1232 (PCT application designated as WO/88/2401)), and the article in The Journal of Biological Chemistry, (Def.'s Ex. 148),[28] was one of the two prior transit peptide constructs relied upon by DeKalb to demonstrate that the OTP was obvious.

The other transit peptide construct in the prior art relied upon by DeKalb is disclosed in U.S. Patent No. 5,776,760 (the "Barry patent") (Def.'s Ex. 1452). The Barry patent discloses a transit peptide construct made of three parts. First, it contains a natural transit peptide of the Rubisco protein from arabidopsis, which is fifty-five amino acids long. Second, this transit peptide is attached to twenty-three amino acids of the mature portion of this arabidopsis Rubisco gene. The third part

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[27] Drs. DeRose and LeBrun testified that the Comai prior art, as described by the Comai patent, contained an amino acid extension of 22 amino acids. (May 18, 1999 Tr. [Doc. #495], at 374 (DeRose Test.); May 19, 1999 Tr. [Doc. #496], at 498 (LeBrun Test.).) However, Dr. Dewey testified that the Comai transit peptide had an extension of 24 amino acids, (May 26, 1999 Tr. [Doc. #499], at 1461), which can be seen in Dr. Comai's article, (Def.'s Ex. 148, at 15105). The Court will use 24 as the number of amino acids in the Comai extension because that is the number actually found in the 1988 Comai publication.

[28] The jury specifically considered as prior art these four Comai works, as well as two others: U.S. Patent No. 5,776,760 ("Barry patent") (Def.'s Ex. 1452), discussed infra, and U.S. Patent No. 4,940,835 ("Shah patent") (Def.'s Ex. 1421), discussed supra. (Jury Instructions [Doc. #460], at 13.)

is a "serine residue and eight amino acids, six of which correspond to the very end of the transit peptide." (May 27, 1999 Tr. [Doc. #500], at 1689 (Dewey Test.).)

*Differences Between the Claimed Invention and the Prior Art*

The most pronounced difference between the Comai transit peptide construct and the OTP is that the OTP contains an additional, complete transit peptide between the N-terminal extension and the passenger protein. This second transit peptide is no "mere structural variation," as claimed by DeKalb. (Def. Br. Supp. Mot. J. Matter L. [Doc. #511], at 9.) Rather, the OTP's final transit peptide serves to allow the entire construct, including the N-terminal extension, to be disengaged from the passenger protein after the construct has been transported into the chloroplast. (May 18, 1999 Tr. [Doc. #495], at 375 (DeRose Test.); id. at 401 (LeBrun Test.).) In contrast, the Comai transit peptide construct leaves its N-terminal extension attached to the passenger protein, because only the initial transit peptide is removed by an enzyme after the construct enters the chloroplast. (Id. at 374-75.)

DeKalb argues that the N-terminal extension does not affect the passenger protein; therefore, the fact that the OTP's extension is removed is a meaningless distinction from the Comai prior art. However, Dr. DeRose testified that because the N-terminal extension is removed, the OTP solved the "paradox" that existed in the research prior to 1991. The paradox was that the N-terminal extension was necessary to import the EPSPS passenger protein into the chloroplast (as noted by

Comai), but, by remaining attached to the protein after the first transit peptide was removed, the extension decreased the efficiency of the EPSPS genes once they were inside the chloroplasts. (Id. at 354-55.) Dr. LeBrun testified regarding experiments that supported Dr. DeRose's description of the paradox. In the 1980's, RPA experimented in tobacco with Dr. Comai's teachings regarding the N-terminal extension and concluded that adding an N-terminal extension resulted in higher glyphosate tolerance than that which resulted from transit peptides without the extension, but it still did not produce an agronomical level of resistance. (Id. at 392-93.) According to Dr. LeBrun, the larger the extension that is attached to the EPSPS enzyme, the more the activity of the enzyme in the chloroplast is decreased and glyphosate tolerance is reduced. (Id. at 396-400.) Even Dr. Dewey, DeKalb's expert witness, admitted that severing the extension from the passenger protein might make a difference in some proteins. (May 26, 1999 Tr. [Doc. #499], at 1463.) Therefore, the evidence would support a jury finding that there was a significant difference between the Comai prior art and the OTP, because the OTP contains a second, full transit peptide that allows a chloroplast enzyme to sever the EPSPS enzyme from the entire transit peptide construct.

Similar to the Comai transit peptide and the OTP, the Barry transit peptide construct contains an initial, natural transit peptide from a Rubisco gene attached to an N-terminal extension from a mature Rubisco gene -- though the extension in Barry is twenty-three amino acids in length. (May 27, 1999 Tr. [Doc. #500], at

1688-89 (Dewey Test.).) A difference between the Barry patent and the OTP is that the OTP's natural transit peptides come from Rubisco genes in sunflower and maize, whereas Barry's natural transit peptides are derived from arabidopsis. (Id. at 1689.) Although transit peptides from different plants would be expected to function in a similar fashion, Dr. Dewey acknowledged that they would not behave "exactly precisely" the same as each other. (Id. at 1691.) A more significant difference between Barry and the OTP is that the Barry construct does not end with a full transit peptide. Rather, the last piece of the Barry construct prior to the passenger protein is derived from the very end of an arabidopsis Rubisco transit peptide and consists of eight amino acids. (May 26, 1999 Tr. [Doc. #499], at 1488 (Dewey Test.).) In contrast, the final part of the OTP is a full, natural transit peptide from the maize Rubisco gene that is forty-seven amino acids in length. (May 17, 1999 Tr. [Doc. #494], at 188 (DeRose Test.).)

*Evidence of Secondary Considerations*

Secondary considerations are essential components of the obviousness determination. See In Re Rouffet, 149 F.3d 1350, 1355 (Fed. Cir. 1998). Three such considerations were at issue in this case: commercial success, long-felt but unsolved need, and failure of others. See Graham, 383 U.S. at 17-18. Although DeKalb attempted to disprove a fourth secondary consideration -- unexpected results showing superiority over the prior art -- RPA did not rely on this consideration in its obviousness case and therefore the Court will not discuss it.

See Medtronic, Inc. v. Intermedics, Inc., 799 F.2d 734, 739 n.13 (Fed. Cir. 1986) (stating that "the absence of objective evidence [i.e., secondary considerations] is a neutral factor").

The dispute regarding these secondary factors is not whether they exist, but rather whether evidence about the factors relates to the OTP by itself or to the Roundup Ready corn, of which the OTP is a part. In other words, whether to consider evidence of these secondary factors depends on whether the requirement of a "nexus" is met. According to the Federal Circuit, "[a] nexus is required between the merits of the claimed invention and the evidence offered, if that evidence is to be given substantial weight enroute to conclusion on the obviousness issue." Stratoflex, Inc. v. Aeroquip Corp., 713 F.2d 1530, 1539 (Fed. Cir. 1983).

For evidence of commercial success to be introduced, RPA bears the burden of coming forward with evidence sufficient to constitute a prima facie case of the requisite nexus between the commercial success of Roundup Ready corn and the OTP. See Demaco Corp. v. F. Von Langsdorff Lic., Ltd., 851 F.2d 1387, 1392 (Fed. Cir. 1988).

> A prima facie case of nexus is generally made out when the patentee shows both that there is commercial success, and that the thing (product or method) that is commercially successful is the invention disclosed and claimed in the patent. When the thing that is commercially successful is not coextensive with the patented invention--for example, if the patented invention is only a component of a commercially successful machine or process -- the patentee must show prima facie a legally sufficient relationship between that which is patented and that which is sold.

Id. DeKalb asserts that it is the GA21 event (created by DeKalb) that led to any commercial success of Roundup Ready corn -- not the OTP -- and therefore, RPA did not successfully demonstrate this "legally sufficient relationship." (Def. Br. Supp. Mot. J. Matter L. [Doc. #511], at 11-12.)

However, there is substantial evidence to demonstrate that the OTP plays an essential role in imparting the glyphosate tolerant trait to Roundup Ready corn. First, the OTP patent itself was directed towards improving glyphosate resistance by facilitating the transfer of EPSPS genes to a plant cell's chloroplast. (Pl.'s Ex. 6, at col. 1-2.) Therefore, the OTP in Roundup Ready corn is being used in a manner consistent with the purpose of the '471 patent. Second, as Drs. DeRose and LeBrun testified, the OTP solved the "paradox" that existed with the Comai prior art because its N-terminal extension is disengaged after the passenger protein is transported into the chloroplast. This evidence reasonably could support a conclusion that the OTP's solution to this paradox resulted in commercial levels of glyphosate resistance by enabling certain enzymes to remain active after they were disconnected from the transit peptide. Third, and quite simply, it had been known since at least 1986 that a transit peptide was necessary to bring an EPSPS gene into the chloroplast to provide glyphosate resistance, and the OTP is the only transit peptide to be used in commercially viable, glyphosate-resistant corn. For example, Monsanto abandoned its most promising corn events in December 1996 in order to concentrate fully on GA21, because Monsanto's lines -- containing other

transit peptides -- showed insufficient levels of glyphosate tolerance. (May 21, 1999 Tr. [Doc. #533], at 1117 (Armstrong Test.).) Moreover, the NK event, which allegedly will replace the GA21 event and which uses a different transit peptide, has not been commercialized yet, nor will it be introduced until at least the year 2001. (Id. at 1119.)

It is true that when the OTP was combined with genes other than the double mutant maize gene in RD-125, it did not provide glyphosate tolerance on its own. (May 18, 1999 Tr. [Doc. #495], at 353 (DeRose Test.).) Moreover, Dr. DeRose testified that it was the combination of the OTP and the double mutant maize gene in RD-125 that imparted the glyphosate tolerance trait in corn. (May 17, 1999 Tr. [Doc. #494], at 211.) However, DeKalb has not provided any case that suggests that the claimed invention must single-handedly be responsible for the commercial success of the disputed product. Rather, as Demaco Corporation makes clear, because this case involves a situation in which "the thing that is commercially successful is not coextensive with the patented invention," RPA simply must demonstrate that there exists "a legally sufficient relationship between that which is patented and that which is sold." 851 F.2d at 1392. Although other elements may share credit for imparting the glyphosate tolerant trait in corn, sufficient evidence exists to conclude that the OTP also was required for the trait to be exhibited in Roundup Ready corn.

Thus, because the evidence is sufficient for a jury to conclude that the OTP

is a direct cause of the glyphosate tolerant trait in Roundup Ready corn, it is appropriate to consider any evidence of the commercial success of Roundup Ready corn. In that regard, RPA's damages expert, Christopher Bokhart, provided sufficient evidence of the commercial success of Roundup Ready corn, including evidence that a premium was being paid specifically for the trait of glyphosate resistance. See In re Huang, 100 F.3d 135, 140 (Fed. Cir. 1996) (stating that evidence of commercial success is relevant in the obviousness context if there is proof that the sales were a direct result of the unique characteristics of the invention).

Moreover, because the evidence allows for a conclusion that a nexus exists between the OTP and the glyphosate tolerant trait in Roundup Ready corn, it is permissible to consider evidence of long-felt need and failure of others. It is undisputed that there was a long-felt but unresolved need for glyphosate tolerance in corn prior to 1991. (See, e.g., May 21, 1999 Tr. [Doc. #533], at 1080 (Armstrong Test.) (noting that Monsanto has attempted to impart glyphosate tolerance in corn since the mid-1980's).) Furthermore, DeKalb cannot seriously dispute the fact that sophisticated research companies and institutions spent many years failing to achieve marketable levels of glyphosate tolerance in corn. (See, e.g., id. at 1105 (stating that by 1996, Monsanto was not obtaining the level of glyphosate tolerance it desired in its own constructs); id. at 1119 (stating that Monsanto still has not successfully commercialized a glyphosate tolerant corn event

other than GA21).)

Given the substantial evidence of a direct connection between the OTP and the success of Roundup Ready corn as the first glyphosate tolerant corn seed, it is appropriate to consider RPA's evidence of commercial success, long-felt need, and failure of others, in order to resolve the obviousness issue.

III (D) (iii)

Again, it is a legal determination whether the Graham factors support the jury's conclusion that DeKalb did not met its burden in demonstrating invalidity under 35 U.S.C. § 103. This Court holds that sufficient evidence exists to support the jury's verdict.

DeKalb's claims for obviousness rest on the erroneous assumption that RPA was required to demonstrate that the OTP demonstrated superior, or improved, properties over the prior art, specifically over prior art by Dr. Comai and by the Barry patent. (DeKalb's Br. Supp. Mot. J. Matter L. [Doc. #511], at 8-9.) While superior properties or unexpected results may be used to show nonobviousness, the lack of such evidence does not lead conclusively to a determination that an invention is obvious. See Richardson-Vicks Inc., 122 F.3d at 1483 ("Evidence of secondary considerations, including evidence of unexpected results and commercial success, are but a part of the 'totality of evidence' that is used to reach the ultimate conclusion of obviousness.").

Instead, the relevant inquiry here is whether there is a reason, suggestion, or

motivation in the prior art that would lead one of ordinary skill in the art to combine the references to Comai and Barry, and that would also suggest a reasonable likelihood of success. See, e.g., In re Dow Chem. Co., 837 F.2d 469, 473 (Fed. Cir. 1988). Such a suggestion or motivation may come from the references themselves, from knowledge by those skilled in the art that certain references are of special interest in a field, or even from the nature of the problem to be solved. See Al-Site Corp. v. VSI Int'l, Inc., 174 F.3d 1308, 1324 (Fed. Cir. 1999). It is insufficient that prior art show similar components, unless it also contains some teaching, suggestion, or incentive for arriving at the claimed structure. See Northern Telecom, Inc. v. Datapoint Corp., 908 F.2d 931, 934 (Fed. Cir. 1990).

DeKalb did not provide clear and convincing evidence that such motivation, teaching, or suggestion existed in the prior art it cited. Rather, DeKalb argues that RPA took the first two parts of the OTP -- the Rubisco transit peptide and the N-terminal extension -- from Comai, and combined them with an idea from the Barry patent to add a portion of a second transit peptide. Such an argument is nothing more than a classic case of an infringer inappropriately using hindsight to collect individual references from the prior art and employ them "as a mosaic to recreate a facsimile of the claimed invention." W.L. Gore & Assocs. v. Garlock, Inc., 721 F.2d 1540, 1552 (Fed. Cir. 1983).

Initially, it must be noted that DeKalb's own expert admitted that nothing in the prior art that existed prior to the Barry patent in 1990, including the Comai prior

art, would have taught, described, or suggested using a second natural transit peptide in a chimeric transit peptide construct. (May 27, 1999 Tr. [Doc. #500], at 1712-13 (Dewey Test.).) Dr. Dewey stated that if one "does not consider Barry, those other prior arts don't tell you to make that particular structure [the OTP]." (Id.) Moreover, as noted above, there is sufficient evidence for the jury to conclude that the OTP's second transit peptide, which enables the disengagement of the N-terminal extension, is a significant difference from the Comai prior art. See discussion supra.

Therefore, DeKalb's obviousness defense rests on whether the Barry patent taught or suggested that a second transit peptide be added to a Comai-like structure of one Rubisco transit peptide and an N-terminal extension. The only evidence DeKalb presented was Dr. Dewey's conclusory opinion that the Barry patent taught that a second cleavage site would occur between the second transit peptide and the passenger protein. (May 27, 1999 Tr. [Doc. #500], at 1693-95 (Dewey Test.).) However, Dr. Dewey could not point to anything specific in the Barry patent, or any prior art, that would suggest this teaching. See ATD Corp. v. Lydall, Inc., 159 F.3d 534, 546 (Fed. Cir. 1998) (overturning an obviousness determination based solely upon the "conclusory opinion" of an expert witness, with no specific evidence of a teaching or suggestion in the prior art).

Moreover, from the evidence in the record, the jury reasonably could conclude that the Barry patent does not teach or suggest a second transit peptide.

First, as noted above, the OTP has a complete, second transit peptide, while the Barry construct only describes an additional eight amino acids between the N-terminal extension and the passenger protein. Second, Dr. DeRose, an expert with six years of specific experience in making herbicide-tolerant plants, testified that he did not read the Barry patent to disclose to a person of ordinary skill in the art that a cleavage site existed between the N-terminal extension and the passenger protein. (May 27, 1999 Tr. [Doc. #500], at 1777-78 (DeRose Test.).) Additionally, Dr. DeRose was able to point to a specific portion of the '471 patent that, to a person of ordinary skill in the art, does teach a cleavage site between the second transit peptide and the passenger protein. (Id. at 1803-04.) Overall, Dr. DeRose testified that nothing in the Barry patent (or the Comai patent) would lead one of ordinary skill in the art to the OTP of the '471 patent. (May 18, 1999 Tr. [Doc. #495], at 381.) Given this evidence, the structural differences between the two patents cannot be explained away by Dr. Dewey's conclusory opinion regarding the alleged teaching of a second cleavage site by Barry.

Third, the attenuated relationship between the Barry patent and the OTP reduces the relevancy of any similarity between the two patents. The Court recognizes that a determination regarding the relationship of the prior art to the invention takes place prior to an inquiry regarding the prior art's teaching about that relationship. See Monarch Knitting Mach. Corp. v. Sulzer Morat GMBH, 139 F.3d 877, 882 (Fed. Cir. 1998) (stating that if those of ordinary skill would have

recognized a relationship between the prior art and the invention, "then, and only then, does the trial court proceed to examine whether the prior art in fact contains a coherent teaching about that relationship"). By letting the jury consider the Barry patent, the Court already has determined that some relationship between the two patents exists. However, the strength of that relationship seems relevant to determining the depth of the teaching, suggestion, or motivation in the prior art. In this case, Dr. Dewey admitted that, although he spent 250 to 300 hours working on this matter, he was not aware of the Barry patent less than five months before trial. (May 27, 1999 Tr. [Doc. #500], at 1686.) He was not aware of it at that point because the "transit peptide described in the Barry patent is a small portion of a larger patent" and "[i]f you just look at . . . the title of the patent, all the information up front, you would not be aware that such a construct is described." (Id. at 1688.) Moreover, substantial evidence was presented that the Barry patent was focused on a different theory of glyphosate tolerance than the '471 patent, and therefore it would require a different type of transit peptide than the inventors of the OTP would find relevant. Whereas the OTP is focused on debilitating glyphosate in the chloroplasts, the Barry patent's purpose is to battle glyphosate in both the cytoplasm and the chloroplasts. (Id. at 1706-12.) According to Dr. DeRose, this different purpose requires a relatively weak transit peptide, because some of the enzyme would need to stay in the cytoplasm and not be transported to the chloroplast. (Id. at 1778-79.) This different purpose also explains why the

Barry construct would use a transit peptide that is only 9% as efficient as a natural transit peptide. (May 18, 1999 Tr. [Doc. #495], at 380 (DeRose Test.).) Such a low level of efficiency indicated to Dr. DeRose that the Barry construct does not work well at bringing enzymes into the chloroplasts. (Id.) In contrast, the OTP's sole purpose is to transport the protein into the chloroplast.

Thus, DeKalb attempted to show obviousness by cobbling together various pieces of the prior art, without demonstrating any suggestion or motivation in the prior art to make the invention of Claim 11 of the '471 patent. DeKalb cannot satisfy its burden of proof with such an argument, for as the Federal Circuit has noted,

> [d]etermination of obviousness can not be based on the hindsight combination of components selectively culled from the prior art to fit the parameters of the patented invention. There must be a teaching or suggestion within the prior art, or within the general knowledge of a person of ordinary skill in the field of the invention, to look to particular sources of information, to select particular elements, and to combine them in the way they were combined by the inventor.

ATD Corp. v. Lydall, Inc., 159 F.3d 534, 546 (Fed. Cir. 1998).

Although it is not necessary given this conclusion, the Court also notes that the secondary factors discussed above support a finding of nonobviousness. Companies such as Monsanto, RPA, and DeKalb tried for many years to develop glyphosate tolerant corn. After many failings, the only brand to make it to market is Roundup Ready corn, which contains the OTP. DeKalb has forecast great profits for Roundup Ready corn, and farmers pay a large "technology fee" solely for the

glyphosate-resistant trait.

In sum, there was substantial evidence from which a reasonable jury could conclude that DeKalb failed to meet its burden to prove by clear and convincing evidence that Claim 11 of the '471 patent was invalid as obvious. Accordingly, DeKalb's motion for judgment as a matter of law on the issue of obviousness [Doc. #510] is DENIED.

III (E)

DeKalb next claims that there was not substantial evidence to support the jury's verdict that RD-125 was a trade secret. (Def. Br. Supp. Mot. J. Matter L. [Doc. #511], at 13.) For RD-125 to be a trade secret, it must have "[d]erive[d] independent actual or potential commercial value from not being generally known or readily ascertainable through independent development or reverse engineering by persons who can obtain economic value from its disclosure or use." N.C. Gen. Stat. § 66-152(3)(a). Factors that may assist a fact-finder in determining whether something is a trade secret include the amount of effort or money expended in developing the information and the ease or difficulty with which the information could properly be acquired or duplicated by others. See Wilmington Star-News, Inc. v. New Hanover Regional Medical Center, Inc., 125 N.C. App. 174, 181, 480 S.E.2d 53, 56 (1997).[29]

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[29] Prior to the start of the trial's second phase, the parties agreed that North Carolina law was the proper law to apply to RPA's trade secret misappropriation claim.

DeKalb relies on two arguments to support its motion for judgment as a matter of law. First, DeKalb asserts that RD-125 was not a trade secret because it was "functionally indistinguishable" from other transit peptide/EPSPS combinations available at the time. (Def. Br. Supp. Mot. J. Matter L. [Doc. #511], at 14.) According to DeKalb, the RD-125 did not possess "some modicum of originality or novelty," (id. at 14), because "combinations that did the exact same thing were available elsewhere," (id. at 16).

It is true that combining a transit peptide with an EPSPS gene to impart glyphosate tolerance in plants was a technique generally known within the industry. Yet, that knowledge is not the secret RPA is attempting to protect. Rather, RPA is claiming as a trade secret the specific combination of the OTP with a maize EPSPS gene that has two precise amino acids mutated. Therefore, it is not persuasive that, prior to RPA's creation of RD-125, others may have performed these same mutations in genes from sources other than maize. (May 17, 1999 Tr. [Doc. #494], at 228 (DeRose Test.); May 26, 1999 Tr. [Doc. #499], at 1453-54 (Dewey Test.).) Indeed, Monsanto had performed "hundreds of thousands of mutations" in EPSPS genes prior to 1996. (May 24, 1999 Tr. [Doc. #498], at 1277 (Padgette Test.).) Yet, it never completed the precise mutations found in RD-125's mutated maize EPSPS gene. (Id.) Even as of 1996, a Monsanto scientist who was involved in the company's glyphosate tolerance research was not aware of the RD-125 combination, even though Monsanto had been working in this area for a decade.

and not readily ascertainable. DeKalb's first claim that RD-125 was readily ascertainable because it was "functionally indistinguishable from other transit peptides" is rejected.

DeKalb's second argument is that there was not substantial evidence to support the jury's verdict that the RD-125 was a trade secret in April 1996, because DeKalb asserts that the RD-125 previously had been published by DeKalb with RPA's consent in DeKalb's 1995 PCT application (Def.'s Ex. 793). (Def. Br. Supp. Mot. J. Matter L. [Doc. #511], at 17.)

DeKalb's argument must fail because there is substantial evidence to support the jury's finding that RD-125 did not cease to be a trade secret when DeKalb's PCT application was published. (Verdict Form For Phase 1 [Doc. #459], at 2.) First, as Dr. DeRose noted, the PCT application only discusses the use of RD-125 as a selectable marker in a petri dish -- it does not discuss using it for glyphosate tolerance in corn plants. (May 27, 1999 Tr. [Doc. #500], at 1775 (DeRose Test.).) Second, the PCT application does not disclose fully the OTP. Rather, it merely describes it as an "[o]ptimized transit peptide sequence consisting of sequences from sunflower and maize." (Def.'s Ex. 793, at 108.) Although the OTP patent had been published by 1995, Dr. DeRose testified that the OTP in RD-125 was slightly mutated and thus not revealed in the '471 patent. (May 27, 1999 Tr. [Doc. #500], at 1774 (DeRose Test.).) Third, the PCT application does not disclose the exact nucleotide sequence of the double mutated maize EPSPS gene, and Drs.

DeRose and LeBrun testified that it would be difficult or impossible for someone skilled in the art to create the double mutant maize gene without the nucleotide sequence. (May 17, 1999 Tr. [Doc. #494], at 222 (DeRose Test.); May 20, 1999 Tr. [Doc. #497], at 830 (LeBrun Test.).)

Essentially, DeKalb attempts to argue that after the 1995 PCT application, all of the information necessary to construct RD-125 was in the public domain and "readily obtainable." (Def. Br. Supp. Mot. J. Matter L. [Doc. #511], at 18.) The original OTP was disclosed in the '471 patent and a later French patent application, published on September 11, 1992 (Def.'s Ex. 1257), it was mentioned in the PCT application, and the specific mutations of the OTP in RD-125 were disclosed separately in a French patent application in 1995 (Def.'s Ex. 1480.)[31] Moreover, DeKalb asserts that the double mutant maize EPSPS gene nucleotide sequence was available in 1995 because the sequence for the native maize EPSPS gene was published in a November 20, 1990 patent by Monsanto (Def.'s Ex. 1450) and the two mutations were published in the PCT application. (Def. Br. Supp. Mot. J. Matter L. [Doc. #511], at 18.)

However, DeKalb misunderstands the nature of the inquiry, for "a trade secret can exist in a combination of characteristics and components, each of which, by itself, is in the public domain, but the unified process, design and

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[31] DeKalb does not address the typographical errors in the description of the OTP, which Dr. DeRose testified have never been corrected publicly. (May 18, 1999 Tr. [Doc. #495], at 323-35 (DeRose Test.).)

operation of which, in unique combination, affords a competitive advantage and is a protectable secret." Glaxo Inc. v. Novopharm Ltd., 931 F. Supp. 1280, 1300 (E.D.N.C. 1996) (quoting Syntex Ophthalmics, Inc. v. Tsuetaki, 701 F.2d 677, 684 (7th Cir. 1983)) (internal quotation marks omitted). The jury reasonably could have found that RD-125 would remain a secret even after the various publications of different pieces of it. None of the pieces disclosed that RD-125 could be used in corn plants for glyphosate tolerance. Moreover, even with Monsanto's publication of the nucleotide sequences of the native maize EPSPS gene, Dr. DeRose testified that it took RPA three-and-one-half years for RPA to isolate and mutate that particular gene. (May 27, 1999 Tr. [Doc. #500], at 1792.) DeKalb's witnesses testified only that various pieces of RD-125 were disclosed at different points between 1990 and 1995. Yet, none of these disclosures refer to each other, or to the ultimate use of RD-125 in corn. As important, there is no evidence that, in 1996, one skilled in the art who was interested in glyphosate tolerance in corn would know to collect these piecemeal bits of information and to connect them together to recreate RD-125. Indeed, there would be no motivation for such action, because by the time the trade secret actually was disclosed in 1997,[32] only two parties knew that RD-125 worked in marketable, glyphosate-tolerant corn: DeKalb and Monsanto. Thus, the jury could reasonably conclude that neither the DeKalb's

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[32] See Verdict Form for Phase 1 [Doc. #459], at 2 (jury finding that RD-125 ceased to be a trade secret by February 1997 when RPA's PCT application was published).

1995 PCT application, nor the various disclosures of pieces of RD-125, disclosed the entirety of RD-125 such that it lost its trade secret status.

Lastly, even if the PCT application disclosed RD-125, there was sufficient evidence for the jury to conclude that RPA did not provide DeKalb with permission to include RD-125 in its PCT application. (Verdict Form For Phase 1 [Doc. #459], at 2.) On August 5, 1993, DeKalb requested permission from RPA to publish in a patent application information regarding various constructs RPA earlier had provided to DeKalb. (Def.'s Ex. 595.) DeKalb clearly requested permission to publish the double mutant maize EPSPS gene in a description of DeKalb's corn transformation process; however, DeKalb's request did not mention that it would publish the specific combination of RD-125 (i.e., the double mutant maize gene connected to the OTP). (Id.; May 27, 1999 Tr. [Doc. #500], at 1773 (DeRose Test.).) As it is this combination that is the trade secret, the jury reasonably could have found that DeKalb's publication in the PCT patent application exceeded the extent of RPA's permission.[33]

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[33] Another problem with DeKalb's "permission" argument is that DeKalb is attempting to rely on DeKalb's own disclosure to assert that RD-125 lost its trade secret status. See Glaxo Inc. v. Novopharm Ltd., 931 F. Supp. 1280, 1300 (E.D.N.C. 1996) (noting that "it is true that parties responsible for the dissemination of another's trade secret may not benefit from the disclosure"). Although DeKalb points to RPA's "permission" to publish the construct, it seems that any "permission" must be evaluated in light of the fact that RPA was under the misperception that RD-125 did not work -- a misperception caused by DeKalb's own fraud. See discussion supra Part III(A)(ii). In other words, it is questionable whether any permission granted by RPA to DeKalb under these circumstances is fully informed permission.

Therefore, DeKalb's motion for judgment as a matter of law on the claim of trade secret misappropriation [Doc. #510] is DENIED.

III (F)

In the second phase or trial, DeKalb also asserted an inequitable conduct defense to RPA's patent claim, based upon alleged false statements and material omissions in a Declaration filed by Dr. Michel LeBrun, one of the named inventors on the '471 patent. "A patent may be unenforceable due to inequitable conduct if the applicant does not disclose material information to the PTO or submits false material information, with an intent to deceive or mislead the examiner. Goodyear Tire & Rubber Co. v. Hercules Tire & Rubber Co., 162 F.3d 1113, 1122 (Fed. Cir. 1998). DeKalb, as the party asserting the inequitable conduct defense, has the burden of proving materiality and intent by clear and convincing evidence. See Kingsdown Med. Consultants v. Hollister Inc., 863 F.2d 867, 872 (Fed. Cir. 1988).

In order for the Court to find the '471 patent unenforceable based upon an alleged material misrepresentation, the Court must first find that the statements about which DeKalb complains are actually misrepresentations, made with knowledge of their falsity. See Herbert v. Lisle Corp., 99 F.3d 1109, 1116 (Fed. Cir. 1996) ("A holding of unenforceability based on the filing of a false oath requires that the oath was false, and made with knowledge of the falsity. Knowledge of falsity is predicate to intent to deceive.") (citation omitted). Then, the Court must determine whether any misrepresentations or omissions meet a

threshold level of materiality. The Court also must determine whether the evidence shows "a threshold level of intent to mislead the PTO." Baxter Int'l, Inc., v. McGaw, Inc., 149 F.3d 1321, 1327 (Fed. Cir. 1998). Only if the threshold levels of materiality and intent are established by clear and convincing evidence, are materiality and intent weighed together. See id. The more material the misrepresentation or omission, the less evidence of intent will be required in order to find that inequitable conduct has occurred. See id. Finally, "[i]n light of all the circumstances, the court must then determine whether the applicant's conduct is so culpable that the patent should be held unenforceable." Id.

The first application for what became the '471 patent was filed on March 4, 1992. (Pl.'s Ex. 963, at 19.) In October 1992, the patent examiner rejected claims 1 through 6 and 12, as obvious over certain prior art, including the Journal of Biological Chemistry article ("Comai article"). (Pl.'s Ex. 963, at 102, 107.) The applicants responded by, among other things, deleting claims 1 through 12 and substituting new claims 25 through 37. (Pl.'s Ex. 963, at 125.) In July 1993, the examiner issued a second office action rejecting these new claims for obviousness over the Comai article again, as well as another piece of prior art. (Pl.'s Ex. 963, at 142, 147.) On January 18, 1994, the applicant responded with Claim 38, the claim which would ultimately become Claim 11 and which is the subject of the instant litigation. (Pl.'s Ex. 963, at 156; May 19, 1999 Tr. [Doc. #496], at 588 (Fiorito Test.).) Claim 38 was rejected as obvious on September 13, 1994 over,

again, the Comai article and another piece of prior art.[34] (Pl.'s Ex. 963, at 230-32.)

The examiner met with a representative from RPA on January 24, 1995. (Pl.'s Ex. 963, at 235.) According to the examiner's notations, she told the RPA representative that "[e]vidence in the form of a Declaration showing unexpected properties of construct with two transit peptides may overcome [103 rejection]. . . No commitment to patentability was made." (Id.) On June 6, 1995, the examiner rejected Claim 38, among other claims, over the Comai article. (Pl.'s Ex. 963, at 244-47). The examiner cited no other relevant prior art. The examiner's rejection and comments were forwarded to Dr. LeBrun. (May 18, 1999 Tr. [Doc. #495], at 436-37.) Dr. LeBrun prepared a Declaration pursuant to 37 C.F.R. § 1.132,[35] in which he attempted to respond to the examiner's comments and rejections by comparing the invention with the prior art found in the Comai article. He signed the Declaration on August 28, 1995. This was his last act as an RPA employee, as

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[34] It should be noted that the PTO, in each of these office actions, also rejected many of the same claims as indefinite under 35 U.S.C. § 112.

[35] Section 1.132 states that

> [w]hen any claim of an application or a patent under reexamination is rejected on reference to a U.S. patent which substantially shows or describes but does not claim the same patentable invention, as defined in § 1.601(n), on reference to a foreign patent, on reference to a printed publication, or on reference to facts within the personal knowledge of an employee of the Office, or when rejected upon a mode or capability of operation attributed to a reference, or because the alleged invention is held to be inoperative, lacking in utility, frivolous, or injurious to public health or morals, affidavits or declarations traversing these references or objections may be received.

37 C.F.R. § 1.132.

he left RPA's employ three days later. (Id. at 437-38.) The examiner thereafter issued a Notice of Allowability on October 23, 1995. (Pl.'s Ex. 963, at 304.) The patent application was published on April 23, 1996. (Pl.'s Ex. 6.)

DeKalb asserts that the LeBrun Declaration[36] contains both material misrepresentations as well as a material omission. (Def. Mem. L. Supp. Inequitable Conduct Defense [Doc. #503], at 7-18.) Evidence regarding these claims was heard by the same jury that heard the trade secret and obviousness issues in the second trial, although for this issue, the jury was sitting in an advisory capacity. At the end of that evidence, the jury made several findings regarding DeKalb's claims. DeKalb's specific claims, the jury's findings, and the Court's conclusions are discussed below.

III (F) (i)

DeKalb first claims that Dr. LeBrun's statements in Paragraph Six of his Declaration were false and misleading. In Paragraph Six, Dr. LeBrun stated that

> 6. The nucleic acid constructs of the present invention which code for two uniquely positioned chloroplast transit peptides are able to localize a gene product into a chloroplast of a plant cell. A nucleic acid construct coding for a single transit peptide from a sunflower ribulose-1,5 bisphosphate carboxylase small subunit (ribulose-1,5 bisphosphate carboxylase small subunit is hereinafter referred to as "SSU") fused to a heterologous gene is also able to localize a gene product into a chloroplast of a plant cell but with a much lower efficiency than the constructs of the present invention. A nucleic acid construct coding for a single transit peptide from a sunflower SSU and

[36] The LeBrun Declaration is Exhibit 20 of Plaintiff's Exhibit 963. Hereinafter, it will be cited as "LeBrun Decl."

> 22 amino acids of the mature N-terminal region of a maize SSU is also less efficient than the claimed constructs of the present APPLICATION in expressing and transporting the aroA gene product and also results in an amino-terminal extension of the aroA gene product. These findings are illustrated in Exhibit 2.

(LeBrun Decl. ¶ 6, at 3.) In Paragraph Seven, Dr. LeBrun fully explains Exhibit 2 to the Declaration, which depicts a "Western analysis" (or "Western Blot") test. (Id. ¶ 7, at 3-4; May 26, 1999 Tr. [Doc. #499], at 1491 (Dewey Test.).)

DeKalb asserts that the Western Blot test described in Exhibit 2 was not conducted in a manner that would produce "quantitative data." (Def.'s Mem. L. Supp. Inequitable Conduct Defense [Doc. #503], at 8.) Therefore, according to DeKalb, LeBrun's statement in Paragraph Six that the claimed transit peptide is more efficient than the prior art is a material misrepresentation, because the Western Blot provided no evidence of increased quantitative efficiency over the prior art. (Id. at 9.)

The jury disagreed with DeKalb's assessment of Paragraph Six, as it found that DeKalb did not prove that "Dr. LeBrun made a positive assertion of fact that the Western Blot results shown in Exhibit 2 demonstrated that the transit peptide of the prior art had a lesser quantitative efficiency than the OTP." (Phase Two Verdict Form [Doc.#464], at 1.) The Court adopts this finding by the jury because there is substantial evidence to support this conclusion. See Hupp v. Siroflex of Am., 122 F.3d 1456, 1465 (Fed. Cir. 1997). Moreover, the Court determines that, even if the sentences made in Paragraph Six can be read as statements of fact, the facts

disclosed by Dr. LeBrun were not misleading or false.

The Court reaches this conclusion because it determines that Paragraphs Six and Seven of the Declaration are meant to be read together; whereas DeKalb's argument requires that the two paragraphs be read in isolation from one another. At the end of Paragraph Six, Dr. LeBrun mentions that "[t]hese findings are illustrated in Exhibit 2." Immediately thereafter in the beginning of Paragraph Seven, Dr. LeBrun begins explaining the Western Blot test in Exhibit 2, which provides qualitative results regarding the size of the protein in the chloroplast. There is no debate that Paragraph Seven accurately and fully describes the test results from the Western Blot test in Exhibit 2, and Dr. Dewey agreed that Paragraph Seven is the only paragraph that describes or explains the Western Blot test. (May 27, 1999 Tr. [Doc. #500], at 1660.) Indeed, Dr. Dewey agreed that the Western Blot test is a typical test for scientists conducting microbiology work, and according to the description in Paragraph Seven, the test in Exhibit 2 was conducted in a manner consistent with the way Western Blot tests are normally run in laboratories. (Id. at 1658.) Dr. Dewey did not find anything in Paragraph Seven to be false or misleading, and he agreed with all three conclusions reached by Dr. LeBrun in Paragraph Seven. (Id. at 1658-60.) Indeed, DeKalb's expert testified that if Paragraphs Six and Seven are read together carefully, any person skilled in the art would conclude that Exhibit 2 did not attempt to show any quantitative measurement. (June 1, 1999 Tr. [Doc. #472], at 101.) Dr. Dewey further agreed

that "anyone reading Paragraph 6, and even if that person interpreted Paragraph 6 to mean something about quantitative measurement, upon reading the rest of the declaration and specifically the following paragraph, would recognize that there was no quantitative measurements attempted in this test." (Id.) Therefore, the Court finds that DeKalb did not demonstrate that Paragraph Six stated as a fact that the claimed product had a higher "quantitative efficiency" than the prior art as a result of the Western Blot tests in Exhibit 2. Rather, Exhibit 2 is fully explained in Paragraph Seven, which was meant to be read in conjunction with Paragraph Six. DeKalb did not meet its burden of proof that Dr. LeBrun made any false statements in Paragraph Six.

III (F) (ii)

DeKalb next claims that Dr. LeBrun failed to disclose certain test results in Paragraphs Eight through Ten. (Def.'s Mem. L. Supp. Inequitable Conduct Defense [Doc. #503], at 11-14.) These paragraphs discuss the results from "Calli tests," (or "agrobacterium" tests), located in Exhibit 4 to the Declaration, in which the weight of transformed explants were compared after one month of exposure to glyphosate in a petri dish. A higher weight indicates more glyphosate tolerance. (May 26, 1999 Tr. [Doc #499], at 1498 (Dewey Test.).) Three results were presented in Exhibit 4: from an untransformed control; from "the 294 construct," which contained a transit peptide, a twenty-two amino acid N-terminal extension, and the aroA gene; and from "the 410 construct," which corresponded to the

claimed invention and which contained a transit peptide, a twenty-two amino acid N-terminal extension, a second transit peptide, and the aroA gene. The untransformed control weighed 5 grams, the 294 construct weighed 12 grams, and the 410 construct weighed 34 grams. (LeBrun Decl. Ex. 4.) In Paragraph 10, Dr. LeBrun concluded that the higher weight of the 410 construct clearly shows "the improved efficiency of the fusion protein of the present invention in increasing glyphosate tolerance in transformed explants. The improved glyphosate resistance of plants transformed with [the 410 construct] is due to either increased efficiency of import of the aroA protein or increased efficiency of the native sized aroA protein compared with the 'extended' aroA protein of the prior art, or both." (LeBrun Decl. ¶ 10, at 5.)

DeKalb asserts that Dr. LeBrun should have disclosed results from other constructs that were tested at the same time as the 294 and 410 constructs, specifically the 297 construct, which contained a transit peptide and thirty-three amino acids connected to the aroA gene. (Def.'s Mem. L. Supp. Inequitable Conduct Defense [Doc. #503], at 11-12.) However, the jury found that DeKalb did not prove by clear and convincing evidence that Dr. LeBrun "failed to disclose test results related to construct 297 in paragraphs 8 through 10, with the intent to deceive or mislead the patent office examiner." (Phase Two Verdict Form [Doc. #464], at 2.)

The Court finds that the test results from constructs other than the 410

construct and the 294 construct were not material. The starting point in determining materiality is the PTO regulations. See Critikon, Inc. v. Becton Dickinson Vascular Access, Inc., 120 F.3d 1253, 1257 (Fed. Cir. 1997). The Patent Office regulations state:

> (b) . . . information is material to patentability when it is not cumulative to information already of record or being made of record in the application, and
>
> (1) It establishes, by itself or in combination with other information, a prima facie case of unpatentability of a claim; or
> (2) It refutes, or is inconsistent with, a position the applicant takes in:
> (i) Opposing an argument of unpatentability relied on by the Office, or
> (ii) Asserting an argument of patentability

37 C.F.R. § 1.56. The entire purpose of the Declaration was to respond to the examiner's objections related to the Comai article prior art and to ascertain the effect of the invention's second transit peptide.[37] The best method of responding to these objections was to compare directly the claimed invention with the Comai prior art. Indeed, in the Amendment to the Application that accompanied Dr. LeBrun's Declaration, the applicants expressly state that the 294 construct is

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[37] For example, in Paragraph Sixteen of the Declaration, Dr. LeBrun summarizes the findings from Paragraphs Five through Twelve, by stating that

> the present invention, exemplified by nucleic acid constructs containing two uniquely positioned SSU chloroplast transit peptide sequences, results in a more efficient expression of the aroA gene than [the 294 construct] modeled after fusion 3 of Comai, et al. Moreover, the aroA gene product produced by the claimed constructs of the APPLICATION do not lead to N-terminal extension of the aroA gene product.

(LeBrun Decl. ¶ 16.)

modeled after the Comai prior art. (Pl.'s Ex. 963, at 254.) The Comai prior art consisted of a transit peptide connected to a twenty-four amino acid N-terminal extension. Of all of the constructs Dr. LeBrun tested, no other construct more closely resembled the Comai prior art than the 294 construct, which contained a transit peptide and a twenty-two amino acid N-terminal extension. (May 19, 1999 Tr. [Doc. #496], at 526 (LeBrun Test.); May 27, 1999 Tr. [Doc. #500], at 1662-63 (Dewey Test.).) The 410 construct also contained a transit peptide and a twenty-two amino acid N-terminal extension. In addition, the 410 construct has the second transit peptide that the inventors claimed differentiated it from the prior art.

In contrast, the 297 construct that was omitted had an N-terminal extension that was thirty-three amino acids in length and did not have a second transit peptide. DeKalb argues that a comparison between the 410 and the 297 was necessary because the 297 was "Comai-like," meaning that it had one transit peptide attached to an N-terminal extension. Yet, the difference in N-terminal extension length between the 297 and the 410 and 294 is important, because Dr. Dewey testified that one could not predict that the N-terminal regions of one transit peptide of one length would function in a manner similar to an internal portion of a transit peptide of a different length. (May 27, 1999 Tr. [Doc. #500], at 1701-03.) Comparing the 297 construct, with thirty-three amino acids, with either the 410 or the 294 construct, each with twenty-two amino acids, would not serve the goal of attempting to ascertain the effect of the second transit peptide contained in the

410 construct. One could not be sure whether the second transit peptide or the additional amino acids caused the test results.

Moreover, DeKalb did not present any evidence that the actual test result from the 297 construct was significant to patentability or inconsistent with the applicant's position of superior results. The 297 construct weighed 27 grams, which indicates that the 410 construct is roughly 25% more effective than the 297 construct. (June 1, 1999 Tr. [Doc. #472], at 113 (Dewey Test.).) Finally, the argument for the materiality of the 297 construct's results is undermined by the fact that nothing in the prior art contains the thirty-three amino acid N-terminal extension found in the 297 construct. (June 1, 1999 Tr. [Doc. #472], at 108 (Dewey Test.).) In contrast, Dr. LeBrun was responding to specific objections from the examiner based upon the Comai prior art. Thus, the results from the 297 construct and other "Comai-like" constructs do not meet the definition of materiality found in 37 C.F.R. § 1.56.

By comparing the two constructs that were most alike, and that most closely resembled the cited prior art, Dr. LeBrun made the most relevant comparison with the prior art that could be made. No other comparison of an available construct with the 410 construct would test only the effect of the second transit peptide, which was the distinguishing feature of the claimed invention. DeKalb did not meet its burden of proof that the omission of the test results of constructs having different N-terminal extension lengths, including the 297 construct, was material to

the Declaration.

III (F) (iii)

Next, DeKalb asserts that Paragraph Eleven of the Declaration contains false and misleading statements about a greenhouse test described in that paragraph. (Def.'s Mem. L. Supp. Inequitable Conduct Defense [Doc. #503], at 15.)[38] In Paragraph Eleven, Dr. LeBrun stated that greenhouse tests had been performed comparing the 410 construct with the 294 construct, and that those greenhouse tests showed that the plants containing the 410 construct demonstrated negligible phytotoxicity when compared to the plants containing the 294 construct. (LeBrun Declaration ¶ 11.) The jury found that DeKalb did not prove by clear and convincing evidence that the above statement was knowingly false, or made without regard for its truthfulness. (Phase Two Verdict Form [Doc. #464], at 2.)

Again, the Court credits the testimony of Dr. LeBrun, who fully explained the

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[38] DeKalb's brief contains several other complaints regarding Paragraph 11, including an allegation that Dr. LeBrun failed to disclose material test results that allegedly contradict his statements in Paragraph 11. (Def.'s Mem. L. Supp. Inequitable Conduct Defense [Doc. #503], at 15.) The Court informed the parties that questions of misrepresentation and intent to deceive would be presented to the advisory jury and that the Court would make findings relating to questions of materiality without submitting them to the jury. DeKalb had ample opportunity to address their questions before the jury and elected not to do so. DeKalb was asked to specify those portions of the Declaration that it identified as constituting inequitable conduct and those issues were placed in interrogatory form and presented to the jury. Those matters which DeKalb now raises post trial relate to issues other than materiality and should have been identified and argued before the jury, which would have had the opportunity to answer discreet question about them. DeKalb has waived these additional objections to Paragraph Eleven of the Declaration.

results in Paragraph Eleven. He testified that the greenhouse test that was performed involved treating transformed plants with glyphosate in the greenhouse. (May 19, 1999 Tr. [Doc. #496], at 483.) After two or three weeks, the plants were examined for several different signs of glyphosate toxification, including reduction in the size of the plant, reduction in the plants' surface area, or some yellowing symptoms. (Id. at 483-84.) Together, these "global" observations were called the "phytotoxicity level," which is mentioned in Paragraph Eleven. (Id. at 484.) The greenhouse observations were reflected in Defendant's Exhibit 1234. (Id. at 485.) Despite DeKalb's allegations, neither the Declaration nor Dr. LeBrun ever stated that all thirty of the transformed plants possessed negligible phytotoxicity. Rather, Dr. LeBrun credibly explained that the results in Paragraph Eleven come from general observations of "plants transformed with [the 410 construct]" as compared to "plants transformed with [the 294 construct]." (LeBrun Decl. ¶ 11.) Finally, Dr. LeBrun's conclusion regarding the superiority of the 410 construct after the Calli and greenhouse tests also was supported by RPA's subsequent decision to drop work with all other transit peptides. (May 19, 1999 Tr. [Doc. #496], at 485.) DeKalb did not meet its burden of proof that Dr. LeBrun made any false statements in Paragraph Eleven.

III (F) (iv)

Finally, DeKalb claims that Paragraph Twelve of the Declaration contains false and misleading statements about field tests described in that paragraph.

(Def.'s Mem. L. Supp. Inequitable Conduct Defense [Doc. #503], at 16-18.)[39] In Paragraph Twelve, Dr. LeBrun stated that field tests had been performed comparing the 410 construct with the 294 construct, and that those field tests showed that the plants containing the 410 construct demonstrated negligible (5% or below) phytotoxicity when compared to the plants containing the 294 construct. (LeBrun Decl. ¶ 12.) The jury found that DeKalb did not prove by clear and convincing evidence that the above statement was knowingly false, or made without regard for its truthfulness. (Phase Two Verdict Form [Doc. #464], at 3.)

Essentially, DeKalb's claims are that the field tests discussed in Paragraph Twelve did not occur and that Dr. LeBrun cited to falsified results from imaginary tests. However, sufficient evidence supports the conclusion that the field tests discussed in Paragraph Twelve did occur. Dr. LeBrun testified credibly at several different points regarding the procedure undertaken during the field tests as well as the results of those field tests. (May 18, 1999 Tr. [Doc. #495], at 401-06, 430-31, 433-34; May 19, 1999 Tr. [Doc. #496], at 488-89.) Moreover, documentary support for the tests does exist, despite DeKalb's assertions to the contrary. (Def.'s Ex. 239, at 028387; Pl.'s Ex. 55.) For example, a January 1991 annual report from RPA discussed an aroA gene connected to the OTP and confirmed that

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[39] As with its other objections, DeKalb's brief contains complaints not addressed by the jury, because it was not asked any special interrogatories regarding them. Therefore, as stated above, because DeKalb did not timely object to these issues not being addressed, the Court considers DeKalb's complaints on these issues waived.

RPA still observed phytotoxicity of about 5% after a treatment with Roundup at 800 grams of active ingredient per hectare -- the exact result found in Paragraph Twelve. (Def.'s Ex. 239; May 18, 1999 Tr. [Doc. #495], at 403-04 (LeBrun Test.).) Neither the jury nor the Court was or is persuaded otherwise by the lack of direct documentary evidence of the field trials, given the length of time between their occurrence and the trial, and the well-documented lack of record-keeping at RPA. (May 17, 1999 Tr. [Doc. #494], at 160-64 (DeRose Test.); May 19, 1999 Tr. [Doc. #496], at 486-87 (LeBrun Test.).) DeKalb did not meet its burden of proof that Dr. LeBrun made any false statements in Paragraph Twelve.

III (F) (v)

In addition to the findings made supra, the Court ultimately concludes that DeKalb did not meet its burden of proving the separate element of intent to deceive the PTO. "Intent is often inferred from surrounding circumstances when a material misrepresentation is shown." Glaxo Inc. v. Novopharm, Ltd., 52 F.3d 1043, 1048 (Fed. Cir. 1995). However, the materiality of a misrepresentation or omission does not lead automatically to an inference of intent to deceive, because intent "is a separate and essential component of inequitable conduct." Molins PLC v. Textron, Inc., 48 F.3d 1172, 1178 (Fed. Cir. 1995) (quoting Allen Organ Co. v. Kimball Int'l, Inc., 839 F.2d 1556, 1567 (Fed. Cir.1988)) (internal quotation marks omitted). Even when the misrepresentation is in affidavit form, an inference is not required.

See Glaxo Inc., 52 F.3d at 1048. Furthermore, "mere gross negligence is insufficient to justify an inference of an intent to deceive the PTO." Baxter Int'l, Inc. v. McGaw, Inc., 149 F.3d 1321, 1329 (Fed. Cir. 1998) (citing Kingsdown Med. Consultants, 863 F.2d at 876). Evidence of good faith must be considered in determining whether inequitable conduct has been shown by clear and convincing evidence. See Baxter Int'l, Inc., 149 F.3d at 1330 (citing Kingsdown Med. Consultants, 863 F.2d at 876). However, good faith is only one factor to be considered along with the totality of the evidence. See id.

First, the Court finds that, even if Paragraph Six contains misrepresentations, Dr. LeBrun did not intend to mislead the PTO with his statements in Paragraphs Six and Seven. He testified credibly at trial that he still believes that the "efficiency of the OTP in conferring resistance to glyphosate is due to the fact that it allows an efficient transport into the chloroplast and the release of a native protein into the chloroplast." (May 18, 1999 Tr. [Doc. #495], at 434.) Moreover, it was clear from his testimony that Dr. LeBrun used the term "efficiency" to mean a more global assessment about the qualitative results he received from his testing. (May 19, 1999 Tr. [Doc. #496], at 555 (LeBrun Test.).) Also, Dr. LeBrun testified credibly that he intended Paragraph Six to be a general introduction to the following paragraphs, and he freely acknowledged that the Exhibit 2 test results from the Western Blot did not provide a quantitative assessment of the claimed construct. (Id.) Most important, the ability of a person skilled in the art to read Paragraphs Six

and Seven together and conclude that Exhibit 2 did not provide quantitative results, see discussion supra, leads to the conclusion that these paragraphs were written in good faith and not written with the intent to deceive the PTO into believing that Exhibit 2 provided results different than what is explained in Paragraph Seven.

Second, even if the results of the Calli tests of other constructs were material, the clear intent of Dr. LeBrun in Paragraphs Eight through Ten was to compare, as accurately as possible, the claimed invention with the examiner's citation to the Comai prior art. Dr. LeBrun testified that the purpose of the test

> was to provide directly comparable results, and by directly comparable I mean a construct having a transit peptide of 55 amino acids from sunflower, then an extension of 22 amino acid [sic] from mature part of the rubisco of maize, and this is 294, compared to OTP which have [sic] in addition a transit peptide from maize. And so we compared the prior art of Comai but strictly to the OTP. It's not a strict comparison with the 297 or 293 [constructs], and that is the reason why we didn't use these results in the patent.

(May 19, 1999 Tr. [Doc. #496], at 526.) The Court accepts as credible Dr. LeBrun's explanation for his omission of the test results from other constructs.

Third, even if misrepresentations occurred in Paragraphs Eleven and Twelve, it is determined that Dr. LeBrun did not intend to deceive the PTO. At most, his general language about "global" results and observations, as well as the scant documentation of the testing in both the greenhouse and the field, are the result of the practices and procedures inherent in commercial research in France, as testified to by both Dr. LeBrun and Dr. DeRose. (May 17, 1999 Tr. [Doc. #494], at 160-64 (DeRose Test.); May 19, 1999 Tr. [Doc. #496], at 486-87 (LeBrun Test.).) As Dr.

LeBrun put it when discussing the greenhouse tests:

> The important point is to remind [sic] that this is a dynamic process. What we did was to test hypothesis, and so we made constructs, we transformed plants, we regenerated plants, and we addressed the efficiency of the construct during the greenhouse test. And the whole idea is to look during a certain time to the evolution of these constructs after treatment and to have [a] global idea of efficiency of the constructs.
>
> And so it can be not done on loose paper or things like that. The important things is to remember what is the important construct and then afterward you can store this important construct and we can forget the other. It's not important. And we can continue to improve the one we have selected, and this is the case for OTP.
>
> OTP was superior. The other were [sic] not. We continue[d] with OTP, and we forgot the other kind of constructs.

(May 19, 1999 Tr. [Doc. #496], at 486-87.) Although DeKalb asserts that the lack of documentation leads to an inference of fraud, the Court concludes that a more likely inference is that RPA simply did not document these tests well. Any mistake that may have found its way into the Declaration based upon these procedures was the result of simple negligence -- not the result of an intent to mislead the PTO or even gross negligence.

In sum, for the reasons stated, the Court finds that Dr. LeBrun did not make misrepresentations in Paragraphs Six, Eleven, and Twelve. Moreover, he did not omit any information that was material in Paragraphs Eight through Ten. The Court also finds that the evidence does not clearly and convincingly support a finding that Dr. LeBrun made any assertions or knowingly omitted any information with the intent to deceive the PTO. The Court finds that DeKalb failed to prove inequitable conduct by clear and convincing evidence.

## IV. MOTIONS FOR A NEW TRIAL

Under Federal Rule of Civil Procedure 59(a), a new trial will be granted if the verdict "will result in a miscarriage of justice, even though there may be substantial evidence which would prevent the direction of a verdict." Cline v. Wal-Mart Stores, Inc., 144 F.3d 294, 301 (4th Cir. 1998) (quoting Atlas Food Sys. & Servs., Inc. v. Crane Nat'l Vendors, Inc., 99 F.3d 587, 594 (4th Cir.1996)) (internal quotation marks omitted). DeKalb asserts that during the trials the Court made several errors which, singularly or in combination, should entitle DeKalb to a new trial.

### IV (A)

DeKalb claims that two prejudicial errors occurring in the first phase warrant a new trial under Fed. R. Civ. P. 59(a).

### IV (A) (i)

First, DeKalb argues that RPA "was permitted to present irrelevant and highly prejudicial testimony that DeKalb had not retained certain documents, and then -- based on no evidence whatsoever -- RPA told the jurors that they could infer fraud from the fact that the documents had been discarded." (Mem. Supp. DeKalb's Mot. New Tr. [Doc. #509], at 1-2.)

"Under the spoliation of evidence rule, an adverse inference may be drawn against a party who destroys relevant evidence." Vodusek v. Bayliner Marine Corp., 71 F.3d 148, 155 (4th Cir. 1995). The inference can be drawn even if the

party's destruction of the documents did not occur in bad faith. See id. at 156. In this case, the documents were the notes taken by Doug Fisher during the negotiations of the 1994 Agreement. It is clear from the evidence in the case that these documents were highly relevant to RPA's case of intentional fraud. See Fed. R. Evid. 401. Mr. Fisher was the lead negotiator for DeKalb on the 1994 Agreement, and his notes and memoranda from the fall of 1994 certainly are relevant as direct evidence of DeKalb's intent as it entered the agreement. Moreover, the destruction of documents was relevant as indirect evidence of fraudulent intent because of Mr. Fisher's central role in many of the events that formed the basis for RPA's fraud claim: he knew about the field test results; he and Chris Flick arranged the composition of the list of RPA materials to be transferred under the 1994 Agreement, including RD-125; and on September 7, 1994 -- the same day as Dr. Flick's letter to RPA that asked permission to use RD-125 as a selectable marker in soybeans but failed to mention the Hawaii field trials -- Mr. Fisher sent a letter to RPA suggesting that they "move quickly" to finalize the 1994 Agreement, (Pl.'s Ex. 309).

Furthermore, at the time the documents were discarded, it was foreseeable that litigation might eventually envelop the 1994 Agreement. The propriety of DeKalb's acquisition of RPA's technology was an issue in DeKalb's negotiations with Monsanto in 1996 over rights to RD-125 and other technology. On April 8, 1996, Monsanto required DeKalb to represent formally that DeKalb had rights to

RPA's technology under the 1994 Agreement. (Pl.'s Ex. 392, ¶ 1.5(b).) As DeKalb claims that it destroyed the documents in early 1996 -- in the middle of its negotiations with Monsanto, after allowing the papers to stay in the "chicken coop" for over a year -- it is a reasonable inference that DeKalb might have destroyed the papers out of fear of future litigation regarding its acquisition of rights to the technology. See Kronisch v. United States, 150 F.3d 112, 126-27 (2d Cir. 1998) (holding that an obligation to preserve evidence arises when "a party should have known that the evidence may be relevant to future litigation"). Therefore, allowing RPA to argue to the jury that it should draw an adverse inference from the absence of these relevant documents was proper.[40] DeKalb's motion for a new trial on this ground is DENIED.

IV (A) (ii)

Second, DeKalb complains that the Court's jury instruction regarding DeKalb's waiver of RPA's alleged breach of the 1985/1991 Agreements "failed to specify, as Illinois law requires, that the jury could only find such waiver if DeKalb intended to relinquish its rights." (Mem. Supp. DeKalb's Mot. New Tr. [Doc. #509], at 2.) A court's failure to give appropriate jury instructions is an adequate

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[40] Moreover, it should be noted that while DeKalb timely objected to the relevance of this information, it did not object contemporaneously to any of RPA's statements regarding inferences the jury may draw from this evidence. Therefore, counsel's statements during closing arguments should be reviewed under a "plain error" standard, which the Court determines is not met. See United States v. Williams, 152 F.3d 294, 300 (4th Cir. 1998).

basis for granting a new trial. See, e.g., Furka v. Great Lakes Dredge & Dock Co., 755 F.2d 1085 (4th Cir. 1985); Edwards v. Mayes, 385 F.2d 369, 373 (4th Cir. 1967).

Under Illinois law, a waiver is an intentional relinquishment of a known right that may be express or implied from the conduct of the party that has allegedly waived its right. See Ryder v. Bank of Hickory Hills, 146 Ill. 2d 98, 104-05, 165 Ill. Dec. 650, 652-53, 585 N.E. 2d 46, 48-49 (1991). The Court instructed the jury that a waiver occurs "when a party, knowing that the other has committed a breach, elects to accept the benefits of the contract. In other words, a party's continued acceptance of the benefits of the breaching party's performance would constitute a waiver of the breach." (Ct.'s Jury Instructions [Doc. #360], at 12.) The essence of DeKalb's complaint is that this instruction did not include the word "intentional." However, by using the words "knowing" and "elects," the Court sufficiently conveyed to the jury that any waiver by DeKalb must be intentional. Putting aside the common sense reading of the instruction's language, one need only turn to Black's Law Dictionary and Webster's Dictionary to find further support. Black's defines "election" as the "act of choosing or selecting one or more from a greater number of persons, things, courses, or rights. . . . The internal, free, and spontaneous separation of one thing from another, without compulsion, consisting in intention and will." Black's Law Dictionary 464-65 (5th ed. 1979). Webster's defines "elect" as "carefully selected: CHOSEN," Webster's Ninth New

Collegiate Dictionary 400 (1987), and "choose" as "to select freely and after consideration," id. at 236. Because it is abundantly clear that any election of a course of conduct after knowledge of a breach is, by definition, intentional, DeKalb's motion for a new trial on this ground is DENIED.

IV (B)

DeKalb further claims that several prejudicial errors occurring during the second phase require the Court to grant its motion for new trial of the patent and trade secret misappropriation claims. (Def. Br. Supp. Mot. New Tr. [Doc. #513], at 1.) These errors can be divided into three groupings: first, a rehash of DeKalb's complaint regarding its license defense; second, evidentiary rulings; and third, jury instructions.

IV (B) (i)

DeKalb's initial complaint relates to the Court's ruling that, as a matter of law, DeKalb would not be permitted to present its license defense in the second phase of the trial. (Id. at 2-9.) The Court has explained this ruling supra. See discussion supra Part III(B). In sum, because of the bifurcation order, which was requested by DeKalb, any evidence regarding an alleged license to this technology should have been presented in the first phase of the trial. The Court has determined that, at the end of the first phase, there was insufficient evidence regarding an alleged license under an implied modification of the 1985/1991 Agreements to present that question to a jury. As DeKalb would not have been

allowed to present this issue to the second jury under the ruling explained in this Opinion, DeKalb was not prejudiced by the manner in which the issue was resolved at trial. Therefore, DeKalb's arguments for a new trial based on the license issue are rejected.

IV (B) (ii)

Next, DeKalb asserts that a new trial should be granted based upon "erroneous prejudicial evidentiary rulings." (Def. Br. Supp. Mot. New Tr. [Doc. #513], at 10.) First, the Court must determine whether any of the rulings about which DeKalb complains were erroneous. Second, even if the Court is mistaken regarding its decision on evidentiary rulings, a new trial should be ordered only if the error affects the substantial rights of the parties. Federal Rule of Civil Procedure 61 provides:

> Harmless Error. No error in either the admission or the exclusion of evidence . . . is ground for granting a new trial . . . , unless refusal to take such action appears to the court inconsistent with substantial justice. The court at every stage of the proceeding must disregard any error or defect in the proceeding which does not affect the substantial rights of the parties.

Fed. R. Civ. P. 61. The question, then, for this motion is whether there was error which "reasonably affected the outcome of the case." ATD Corp. v. Lydall, Inc., 159 F.3d 534, 549 (Fed. Cir. 1998). A number of factors have guided the courts in their determinations of whether error is harmless, including (1) whether erroneously admitted evidence was the primary evidence relied upon, (2) whether the aggrieved party was nonetheless able to present the substance of its claim, (3)

the existence and usefulness of curative jury instructions, (4) the extent of jury argument based on tainted evidence, (5) whether erroneously admitted evidence was merely cumulative, and (6) whether other evidence was overwhelming. See id. at 549-50.

DeKalb asserts that the Court erred in admitting evidence of the "commercial success" of Roundup Ready corn, because it claims that no evidence was presented of the "nexus" between this success and the patented invention, the OTP. As discussed supra in Part III(D)(ii), the Court finds that sufficient evidence was presented to conclude that such a nexus existed. Moreover, any error in this regard is harmless, because evidence of commercial success and the other secondary considerations was not necessary given the Court's conclusion that DeKalb failed to provide evidence of a motivation, suggestion, or teaching in the prior art. See discussion supra Part III(D)(iii).

DeKalb also objects because the Court did not allow full cross examination of Mr. Bokhart regarding this nexus. This argument is meritless as well. RPA was explicit in stating that Mr. Bokhart was not being offered to demonstrate nexus between the OTP and commercial success. (May 20, 1999 Tr. [Doc. #497], at 876.) Moreover, Mr. Bokhart was qualified as an expert witness in the fields of accounting and the analysis of financial documents, (id. at 880-81), and repeatedly avoided answering questions that delved into the "technological" background of Roundup Ready corn, (see, e.g., May 21, 1999 Tr. [Doc. #533], at 951-52). Mr.

Bokhart provided the opinion that DeKalb was able to charge an extra fee for Roundup Ready corn due to the trait of glyphosate resistance. Other evidence, discussed supra in Part III(D)(ii), provided sufficient evidence for the jury to find that the OTP was directly responsible for this trait.

DeKalb further asserts that the Court's exclusion of the "Chretien memo" (Def.'s Ex. 1467) precluded DeKalb from receiving a fair trial. (Def. Br. Supp. Mot. New Tr. [Doc. #513], at 13.) According to DeKalb,[41] an RPA patent agent stated in a memo that, after DeKalb's PCT application in 1995, "the gene finds itself in the public domain." (Id. at 14.) DeKalb asserted at trial that its purpose in seeking to introduce the Chretien memo was for the jury to draw an inference that, whether RPA wanted it disclosed or not, "the gene" -- presumably the double mutant maize gene -- was in the public domain as of 1995. (May 18, 1999 Tr. [Doc. #495], at 281.) However, the Court fails to find any relevance to Mr. Chretien's opinion regarding whether RD-125 was "disclosed" to the public. Mr. Chretien is a French patent agent, not an attorney. The jury had the PCT application, testimony about its purpose, and instructions regarding what constitutes a trade secret and what constitutes disclosure. Allowing the opinion of a non-expert in a form which could not be cross-examined would have provided no assistance to the jury and would have been prejudicial to RPA. See Fed. R. Evid. 401, 403.

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[41] As the memo was not introduced into evidence, the Court does not have a complete copy of the memo and is relying on DeKalb's representation of the memo's contents and the transcript of the Court's hearing on this issue.

More importantly, the jury found that DeKalb disclosed RD-125 in the PCT application without RPA's permission. (Verdict Form for Phase 1 [Doc. #459], at 2.) The Court has found that substantial evidence supported this finding. See discussion supra Part III(E). Indeed, the Chretien memo itself notes that, in Mr. Chretien's opinion, he thought DeKalb committed itself not to make a disclosure. (May 18, 1999 Tr. [Doc. #495], at 280.) The lack of permission to disclose renders any inference regarding the actual disclosure of the PCT application irrelevant because even if "the gene" was disclosed in 1995, DeKalb cannot benefit from its own unauthorized disclosure of the gene combined with the OTP. See discussion supra Part III(E). Therefore, even if the Court was mistaken in excluding the Chretien memo, the error was harmless because it did not effect the outcome of the trial. See Fed. R. Civ. P. 61.

Finally, DeKalb objects to the exclusion of Dr. Comai as a witness. (Def. Br. Supp. Mot. New Tr. [Doc. #513], at 15-16.) The Court finds that the problems surrounding Dr. Comai's testimony, including prejudice to RPA because DeKalb had never identified him as a possible witness prior to trial, jury confusion, duplicative testimony, and relevance, were fully aired at trial. (May 21, 1999 Tr. [Doc. #533], at 908-39.) The Court's view remains that Dr. Comai's testimony does not survive the balancing of Federal Rule of Evidence 403, for the reasons stated at the hearing on May 21, 1999.

The evidentiary rulings about which DeKalb complains did not prejudice

substantial rights of the parties or result in a miscarriage of justice.

IV (B) (iii)

DeKalb's last set of arguments involves claims that three jury instructions were so erroneous as to require a new trial. Improper instructions, of course, may be grounds for a new trial. See, e.g., Harwood v. Partredereit AF 15.5.81, 944 F.2d 1187, 1192 (4th Cir. 1991). However, instructions must be viewed in their entirety, and a new trial is appropriate only when it is clear that error in the instructions as a whole was such as to have misled the jury. See Railroad Dynamics, Inc. v. A. Stucki Co., 727 F.2d 1506, 1518 (Fed. Cir. 1984). The Court finds that the jury instructions about which DeKalb complains are all correct statements of the law, and that as a whole, the jury was duly charged regarding the essential elements of the claims and defenses in this case.

The first complaint is that the Court refused to allow DeKalb to argue that the Patent Office's determination of nonobviousness should not be granted deference because it was based upon the LeBrun declaration, which DeKalb asserts was fraudulent. (Def. Br. Supp. Mot. New Tr. [Doc. #513], at 16-18.) Moreover, imbedded in this complaint is DeKalb's further objection that it should have been allowed to present evidence that "RPA's patent issued because of the fraudulent LeBrun declaration." (Id. at 18.) The thrust of DeKalb's instruction and proposed argument to the jury was that the jury should consider whether RPA's rebuttal evidence to the PTO was sufficient to overcome the PTO's initial determination of

prima facie obviousness. Such argument is incorrect as a matter of law, for

> the determination of obviousness, vel non, requires that all the evidence be considered together. . . . If rebuttal evidence of adequate weight is produced, the holding of prima facie obviousness, being but a legal inference from previously uncontradicted evidence, is dissipated. The objective evidence of unobviousness is not evaluated for its separate knockdown ability against the stonewall of the prima facie case, but is considered together with all other evidence, in determining whether the invention as a whole would have been obvious to a person ordinary skill in the field of the invention.

Applied Materials v. Advanced Semi. Materials, 98 F.3d 1563, 1570 (Fed. Cir. 1996) (citations and quotation marks omitted). Rather than accept DeKalb's erroneous proposition, the Court properly instructed the jury on the appropriate deference to the PTO, the burden of proof, and the Graham factors for consideration of the obviousness issue. (Jury Instructions [Doc. #460], at 11-17.). Cf. Al-Site Corp. v. VSI Int'l, Inc., 174 F.3d 1308, 1323 (Fed. Cir. 1999). The Court's rulings on this matter prevented DeKalb from presenting confusing evidence of the PTO's decision, when that decision was made under a "preponderance of the evidence" standard and the jury here would be using a "clear and convincing" standard. Moreover, in order to rebut a showing of one of the Graham secondary considerations, the Court allowed DeKalb to present evidence undermining LeBrun's assertion in his declaration that the invention in the '471 patent demonstrated "new or unexpected properties." In reviewing the transcript of DeKalb's discussion with the Court on this matter, it seems that DeKalb's real complaint on this issue is that the Court did not allow DeKalb to argue its inequitable conduct case to the jury

during the phase of the trial that focused on obviousness. (May 26, 1999 Tr. [Doc. #499], at 1380-1401.) The Court finds this complaint to be untenable as well.

DeKalb also asserts that the Court should have instructed the jury that to be patentable, an invention must be structurally different from the products in the prior art, and that the difference must result from a difference between the manner in which the prior art product functions and the manner in which the claimed invention functions. (Def. Br. Supp. Mot. New Tr. [Doc. #513], at 18.) The Court finds no support for DeKalb's proposed instruction in the cases it cites. Moreover, the instruction provided by the Court -- that the "patent laws do not require an invention to be superior to the prior art in order to be patentable," (Jury Instructions [Doc. #460], at 13) -- is correct as a matter of law. See Ryco, Inc. v. Ag-Bag Corp., 857 F.2d 1418, 1424 (Fed. Cir. 1988) ("Nothing in the patent statute requires that an invention be superior to the prior art to be patentable."). Therefore, the Court rejects DeKalb's argument on this point.

DeKalb's last objection to the jury instructions relates to the Court's wording of its instruction regarding trade secret misappropriation. (Def. Br. Supp. Mot. New Tr. [Doc. #513], at 19.) As with DeKalb's argument regarding the Court's use of the words "knowing" and "elects" instead of "intentional," see discussion supra Part IV(A), this complaint is nothing more than post hoc argument about the choice of words that ultimately convey the same substantive meaning to the jury. This complaint is also rejected.

The objections advanced by DeKalb do not warrant a new trial. DeKalb's motion for a new trial on the patent and trade secret claims [Doc. #512] is DENIED.

## V. LEGAL AND EQUITABLE RELIEF

The foregoing conclusions compel the following rulings regarding the remedies available to RPA. First, the Court will rescind the 1994 Agreement. Second, the Court will enter Judgment for RPA for $1 in nominal damages and for $15 million for unjust enrichment based upon DeKalb's fraud. See discussion infra Part V(A). Third, the Court will enter Judgment for RPA for $50 million for punitive damages. See discussion infra Part V(B). Fourth, the Court will enter Judgment for RPA on its trade secret misappropriation claim and its patent infringement claim. It is the Court's understanding that DeKalb and RPA have entered into a stipulation regarding damages from these claims. Fifth, the Court will issue a permanent injunction upon DeKalb regarding its use of the '471 patent, the parameters of which will be explained in a separate Order, filed contemporaneously herewith. See discussion infra Part V(C). Sixth, the Court will deny DeKalb's motion for a stay of the permanent injunction; however, the Court will stay the imposition of the injunction for thirty days from the filing of this Opinion in order to allow DeKalb the opportunity to appeal the denial of its motion for a stay. See discussion infra Part V(D). Seventh, the Court will deny RPA's motions for attorneys' fees, increased damages, and special equitable remedies. See discussion infra Part V(E).

V (A)

The jury awarded RPA $15 million based upon unjust enrichment. This verdict does not contradict North Carolina law, is in accord with general principles of restitutionary remedies, and is supported by substantial evidence.

DeKalb asserts that RPA, having been granted rescission, should not be allowed to recover for unjust enrichment as well. (Def. Reply Mem. [Doc. #506], at 8.) This argument relies on North Carolina's doctrine of election of remedies, whereby "a party alleging fraud must elect either the remedy of rescission or that of damages, but may not seek both, as these remedies are inconsistent." Mehovic v. Mehovic, 514 S.E.2d 730, 733 (N.C. Ct. App. 1999) (citing Parker v. White, 235 N.C. 680, 688, 71 S.E.2d 122, 128 (1952)); see also Bernard v. Central Carolina Truck Sales, Inc., 68 N.C. App. 228, 231, 314 S.E.2d 582, 585 (1984). One who elects rescission "may recover back what he has parted with under [the contract], but cannot recover damages for the fraud." Mehovic, 514 S.E.2d at 733 (quoting Parker, 235 N.C. at 688, 71 S.E.2d at 128) (internal quotation marks omitted). However, the election of remedies rule does not preclude an award based upon unjust enrichment, for the unjust enrichment award is a restitutionary measure -- not a measure of "damages" from the contract or the fraud. See 1 Dan B. Dobbs, Law of Remedies § 4.1(1), at 557 (2d ed. 1993) (noting that "*restitution* is not *damages;* restitution is a restoration required to prevent unjust enrichment"). An award based upon unjust enrichment, then, requires DeKalb to disgorge the

profits it made from its fraudulent actions. It is based upon DeKalb's illicit gains – not damage to RPA as a result of the fraud.

Although North Carolina courts have not addressed whether an award based on unjust enrichment would be proper in a fraud case such as the instant matter, in which an item received through fraud had increased in value during the time between the fraud and the rescission,[42] it is likely that North Carolina courts would allow an unjust enrichment award under these circumstances. Rescission does not limit a defrauded party only to return of the property that was defrauded. Cf. Lumsden v. Lawing, 117 N.C. App. 514, 518, 451 S.E.2d 659, 662 (1995) (acknowledging that the rule that rescission requires a return to the status quo ante is a general rule, not an absolute one). North Carolina courts have acknowledged that, as part of a rescission order, RPA is entitled to "full restitution" for the license it provided DeKalb in the 1994 Agreement. See Opsahl v. Pinehurst, Inc., 81 N.C.

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[42] In Kee v. Dillingham, 229 N.C. 262, 49 S.E.2d 510 (1948), the North Carolina Supreme Court did allow for a plaintiff to recover "special damages" if "rescission of the contract does not place the injured party in status quo, as where he has suffered damages which cancellation of the contract cannot repair." Id. at 265, 49 S.E.2d at 512. However, special damages are still measures of contractual "damages," and therefore do not, by definition, include restitutionary measures such as unjust enrichment. See Lumsden v. Lawing, 107 N.C. App. 493, 502, 421 S.E.2d 594, 599 (1992); Canady v. Mann, 107 N.C. App. 252, 256-57, 419 S.E.2d 597, 600 (1992) (citing Black's Law Dictionary 469 (4th ed. 1951), which defines "special damages" as damages that "are the actual, but not the necessary, result of the injury complained of, and which in fact follow it as a natural and proximate consequence in the particular case, that is, by reason of special circumstances or conditions").

App. 56, 65, 344 S.E.2d 68, 74 (1986). In fact, at least one North Carolina court has gone farther than awarding unjust enrichment damages by allowing punitive damages in a case involving rescission of a contract, which implies an openness to consider the equities of a situation involving intentional fraud. See Mehovic, 514 S.E.2d at 733.

Importantly, an award based upon unjust enrichment comports with general principles of damages and remedies as well. As Professor Dobbs states,

> [a] rescission is an avoidance of a transaction. Rescission will normally be accompanied by restitution on both sides. Rescission is thus less a remedy and more a matter of the conceptual apparatus that leads to the remedy: the contract is being unmade, so restoration of benefits received under the contract seems to follow.

1 Dobbs, supra § 4.3(6), at 614; see also Lumsden, 117 N.C. App. at 518, 451 S.E.2d at 662 ("Rescission of a contract implies the entire abrogation of the contract from the beginning.").

In cases involving fraud, the defrauded party "is entitled to have restitution of all values which he transferred in the transaction as a result of the misrepresentation." 2 Dobbs, supra § 9.3(4), at 593. In a claim based on actual fraud, such as the instant case, part of the "value" calculation includes profits the fraudulent party received from its actions. Indeed, courts normally award as restitution "all unique tangible and intangible property transferred to the defendant if it is capable of specific return, and if that property is still in the defendant's hands, . . . *and* . . . any benefits defendant derived from the use of the property or

intangibles transferred . . . as may be appropriate." Id. at 593-94 (emphasis added). The Restatement (Second) of Contracts § 376 (1981) recognizes the right of a party that is defrauded to rescind a contract and sue for restitution "for any benefit he has conferred on the other party," including the fraudulent party's profits. An illustration in the Restatement is analogous to the instant case:

> A fraudulently induces B to make a contract to sell a tract of land for $100,000. After B has conveyed the land and A has paid the price, A farms the land at a net profit of $10,000. B then discovers the fraud, disaffirms the contract for misrepresentation, tenders back the $100,000, and sues A for specific restitution plus the $10,000 profit that A made by farming the land. B can recover the land and $10,000 in restitution from A.

Restatement (Second) of Contracts § 376 illus. a(5) (1981).

The seminal case involving this notion of awarding unjust enrichment to a defrauded party based upon the increase in value of the defrauded property is Janigan v. Taylor, 344 F.2d 781 (1st Cir. 1965).[43] In Janigan, the defendant induced plaintiffs to sell their stock by fraudulent concealment of inside information. Two years later, the stock had increased in value dramatically. Although it was speculative whether the plaintiffs would have profited in the same way had they retained the stock, the court held that they could recover the defendant's profits to prevent the defendant's unjust enrichment. Id. at 786. The

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[43] Although Janigan arose under federal securities laws, "state-law fraud remedies produce the same kind of results, with the plaintiff recovering the defendant's market price gain at a much later date." 2 Dobbs, supra § 9.3(4), at 598-99.

court distinguished between cases in which, by fraud, "one is caused to buy something that one would not have bought or would not have bought at that price," and cases in which "the property is not bought from, but sold to the fraudulent party." Id. at 786.

In the latter case, which aptly describes the instant case, it is appropriate to consider awarding the defrauded party "future accretions not foreseeable at the time of the transfer," even though they may be speculative, because they accrued to the fraudulent party. Id.

> [T]here can be no speculation but that the defendant actually made the profit and, once it is found that he acquired the property by fraud, that the profit was the proximate consequence of the fraud, whether foreseeable or not. It is more appropriate to give the defrauded party the benefit even of windfalls than to let the fraudulent party keep them. We may accept defendant's position that there was no fiduciary relationship and that he was dealing at arm's length. Nonetheless, it is simple equity that a wrongdoer should disgorge his fraudulent enrichment.

Id. (citation omitted). In short, the court "fashioned relief to prevent the wrongdoer from the windfall benefit of his wrongful conduct." Estate of Jones v. Kvamme, 449 N.W.2d 428, 432 (Minn. 1989).

The same principle applies to this matter. In the instant case, DeKalb has made a great deal of money because of its fraudulent use of RD-125 since 1994. An award of "full restitution," Opsahl, 81 N.C. App. at 65, 344 S.E.2d at 74, must take into account the enormous increase in the value of RD-125 in the years after DeKalb received its license fraudulently. It would be neither equitable nor just

simply to rescind the 1994 Agreement and to abrogate DeKalb's license to RD-125, while also allowing DeKalb to keep the proceeds of those ill-gotten gains. DeKalb should not be allowed to profit from its wrongful use of RPA's property.

In order to determine how much DeKalb unjustly benefitted from its use of RD-125,

> the court must resort to general considerations of fairness, taking into account the nature of the defendant's wrong, the relative extent of his or her contribution, and the feasibility of separating this from the contribution traceable to the plaintiff's interest. . . . [T]he more culpable the defendant's behavior, and the more direct the connection between the profits and the wrongdoing, the more likely that the plaintiff can recover all defendant's profits.

Earthinfo, Inc. v. Hydrosphere Resource Consultants, Inc., 900 P.2d 113, 119 (Colo. 1995). The jury considered substantially similar factors in reaching its $15 million verdict for unjust enrichment. The Court instructed the jury that

> [u]njust enrichment is a very broad and flexible doctrine recognized in the law. It has as its basis the principle that it is contrary to equity and good conscience for a defendant to retain a benefit which has come to him at the expense of the plaintiff. It's [sic] three basic requirements are (1) that the defendant was benefitted, (2) that the defendant unjustly did not pay the plaintiff for the benefits, and (3) that the failure of payment was to the plaintiff's detriment. In considering whether the doctrine should be applied in a particular case, all the facts must be examined to determine whether the circumstances render it "just or unjust, equitable or inequitable, conscionable or unconscionable," to apply the doctrine. The appropriate remedy when a party has been unjustly enriched at the expense of another is to award the injured party all of the profits attributable to the unjustly retained benefit.

(Jury Instructions [Doc. #370], at 1.) The jury was directed to consider "in what amount, if any, RPA has proven DeKalb's profits were attributable to use of the

RPA double mutant maize EPSPS gene and optimized transit peptide (OTP)." (Id. at 2.)

The Court adopts the jury's determination that $15 million is an appropriate calculation of the role played by RD-125 in the success of Roundup Ready corn. RPA's RD-125 construct is directly responsible for imparting the glyphosate resistant trait to Roundup Ready corn. See discussion supra Part III(D)(ii); III(D)(iii). DeKalb charges an additional $18 per bag premium for the trait of glyphosate resistance on top of its price for normal, non-glyphosate-resistant corn seed. Christopher Bokhart, RPA's expert witness, testified that in 1998 and 1999, DeKalb would receive almost $22 million because of Roundup Ready corn, consisting of $8.5 million in trait premiums, (Apr. 13, 1999 Tr. [Doc. #487], at 196), a subsidy from Monsanto of $4.3 million to cover some of DeKalb's growing costs, (id. at 198), and incremental sales of corn containing RD-125 of $9 million, (id. at 200-01). By not granting RPA all of the $21.8 million calculated by Mr. Bokhart, the jury's award appropriately credits DeKalb for its role in producing Roundup Ready corn; however, it also recognizes the substantial evidence that demonstrated that Roundup Ready corn would not be resistant to glyphosate without RD-125.

In sum, rescission is merely the first step in a restitutionary analysis of a fraud claim. The second step is to consider restitution by determining whether the fraudulent party unjustly benefitted from its wrongful conduct. 1 Dobbs, supra §

4.3(6), at 614. In this case, the jury determined, and the Court agrees, that RPA is entitled in equity to $15 million, due to the unjust enrichment DeKalb received in 1998 and 1999 from perpetrating its fraud in 1994.

V (B)

In North Carolina, punitive damages are allowed to punish a wrongdoer and to deter similar future conduct. Fraudulent conduct alone is sufficient to support an award of punitive damages. See Newton v. Standard Fire Ins. Co., 291 N.C. 105, 112-113, 229 S.E.2d 297, 301-302 (1976). Punitive damages may also be awarded in an equitable action for recission when the recission is based upon fraudulent conduct. See Mehovic, 514 S.E.2d at 734.

Although North Carolina has now adopted legislation limiting an award of punitive damages to the greater of $250,000 or three times actual damages, that statute, N.C. Gen. Stat. §1D-25 (1997), did not become effective until the fraud claim in this case had accrued and is to be given no retroactive application. Under the law to be applied in this case, the decision whether to award punitive damages and the appropriate amount of the award is in the discretion of the jury, although, to pass judicial scrutiny, an award must not be so excessively disproportionate to the circumstances of aggravation or outrage justifying the award that due process is offended. See Maintenance Equip. Co. v. Godley Builders, 107 N.C. App. 343, 352, 420 S.E.2d 199, 204 (1992).

The jury in this case was instructed to consider the following factors in

reaching its decision about punitive damages:

> (1) the reprehensibility of DeKalb's motives and conduct; (2) the likelihood, at the relevant time, of serious harm to RPA or others similarly situated; (3) the degree of DeKalb's awareness of the probable consequences of its conduct; (4) the duration of DeKalb's conduct; (5) the actual damages suffered by RPA; (6) any concealment by DeKalb of the facts or consequences of its conduct; (7) the existence and frequency of any past similar conduct by DeKalb; (8) whether DeKalb profited by the conduct; and (9) DeKalb's ability to pay punitive damages, as evidenced by its revenues or net worth.

(Jury Instructions (3rd Phase) [Doc. #470], at 2-3.)

These are similar to the factors often cited by courts determining whether a punitive damage award comports with due process. Cf. Pacific Mut. Life Ins. Co. v. Haslip, 499 U.S. 1, 21-22, 111 S.Ct. 1032, 1045-1046, 113 L.Ed.2d 1 (1991).

In this case the jury determined that DeKalb had not only initially obtained RD-125 by agreeing to keep RPA apprised of its research progress but also that it had formed and executed a scheme to deceive and mislead RPA by wilfully concealing the actual success of RD-125 in conferring commercial levels of glyphosate resistance in corn. This included the important information that the resistance had been successfully passed from plants regenerated in the laboratory -- from cells grown in a petri dish -- to the seeds of those plants which, in turn, were planted in a field where they germinated and grew into plants that exhibited resistance to applications of glyphosate up to four times the normal commercial application. This information was important because it showed the trait could be passed from one generation to another and because seeds retaining the trait were

viable and able to grow into plants in an outdoor environment. Both were significant since the introduction of new genetic material, even if successful in initially conferring a desired trait to the cells originally transformed, often affects other necessary traits including the ability to reproduce. Even when a transformed plant has the ability to reproduce, it is unknown whether the desired trait will be transmitted to the next generation or whether the insertion of the new genetic material will alter old traits necessary to the plant's continuing viability.

As a result of this information being concealed, RPA entered into the 1994 agreement without knowledge that RD-125 had any commercial value and -- without receiving any consideration[44] for doing so -- gave DeKalb an unconditional, paid-up license to use and to sublicense a genetic construct that accomplished an objective for which much of the worldwide agricultural industry had been searching competitively for a number of years.

DeKalb, immediately upon completion of the Hawaii field tests, had begun back crossing with its commercial quality lines. Successful back crossing normally takes at least two-and-a-half to three years using the growing seasons in three parts of the world. Since no one else in the industry had discovered a means of conveying glyphosate resistance to corn plants, DeKalb gained a significant jump on

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[44]While DeKalb contended at trial that it did give some consideration for acquiring the right to use and commercialize RD-125, there was no evidence from which a reasonable fact finder could have determined there was any consideration in addition to that given for rights to the Comai genetic materials originally comprising the subject matter of the agreement.

all others. While DeKalb was moving toward commercialization, RPA lost its opportunity to negotiate the sale of licenses to others who might have wished to enter the back crossing process in competition with DeKalb. DeKalb, on the other hand, has licensed others including Monsanto, the company which now solely owns DeKalb. The present and future effect of those sublicenses will likely be determined in future litigation; however, one present effect of the Monsanto sublicense is that this Court -- on the basis that there was no showing that Monsanto was aware of fraud at the time of acquiring the license -- dismissed Monsanto as a defendant in this case.

DeKalb and, subsequently Monsanto, projected Roundup Ready corn not only as a product which would generate much interest and consequent sales among its normal customers, but as a product which would increase DeKalb's market share in the corn seed industry. Evidence supported a finding that in the first two years of availability $22 million in DeKalb corn seed sales was directly attributable to the glyphosate resistant trait. After hearing evidence from DeKalb regarding its costs to produce and market Roundup Ready corn, the jury determined that DeKalb had been unjustly enriched by $15 million.

In BMW v. Gore, 517 U.S. 559, 574-583, 116 S.Ct. 1589, 1598-1603 (1996) the Supreme Court emphasized three factors in determining whether an award is grossly excessive: reprehensibility of the defendant's conduct; the ratio of the award to the actual harm inflicted and the potential harm which might have

been inflicted; and a comparison to comparable civil and criminal penalties.

The jury in this case found actual fraud. In dealings between corporations, fraud, which by nature and definition necessarily involves intentional trickery and deceit, stands at the apex of reprehensibility. The fraud here resulted in RPA granting DeKalb an unrestricted, paid up license to use RD-125 and the right to sublicense others to use RD-125 on a basis different than it would have had it known RD-125 actually worked. This effectively prevented RPA from negotiating with others for similar licenses at a time when those negotiations would likely have been the most profitable and it allowed DeKalb to grant sublicenses, the validity of which are still to be determined, perhaps at considerable expense. The jury determined that DeKalb, unjustly, had received $15 million in a two-year period from sales directly attributable to the use of RD-125.

Civilly, in 1994, N.C.Gen. Stat. 75-1.1 provided for treble damages for unfair and deceptive trade practices. See Hardy v. Toler, 24 N.C. App. 625, 630-31, 211 S.E.2d 809, 813, modified on other grounds, 288 N.C. 303, 218 S.E.2d 342 (1975). Criminally, in 1994, obtaining property by false pretenses was a Class H felony punishable by imprisonment up to 10 years and a fine in the discredtion of the court. See N.C. Gen. Stat. §§ 14-100 (1993) (current version at N.C. Gen. Stat. § 14-100 (supp. 1998)), 14-1.1 (1993) (repealed Jan. 1, 1995). On October 1, 1994, structured sentencing laws became effective in North Carolina. See N.C. Gen. Stat. § 15A-1340.10 et seq. (1997). On December 1, 1997, the offense of

utilizing false pretenses to obtain property valued at more than $100,000 became a Class C felony. See N.C. Gen. Stat. § 14-100 and editor's note (supp. 1998). The presumptive sentence in such a case would be 58-73 months of incarceration, and a fine in the discretion of the court. See N.C. Gen. Stat. § 15A-1340.17. A fine "in the discretion of the court" apparently has no recognized limits short of the Eighth Amendment.

In this action, RPA was not seeking compensatory damages but recission of the 1994 agreement and disgorgement of profits. Even so, there is no apparent reason when performing the "ratio" analysis not to use the jury's unjust enrichment award of $15 million since that represents sales proceeds directly attributable to the wrongful use of RD-125. Doing so, the ratio to punitive damages is 3.3, a figure well within that allowed in both Pacific Mut. Life Ins. Co. v. Haslip, 499 U.S. 1, 111 S.Ct. 1032 (1991) and TXO Prod. Corp. v. Alliance Resources Corp., 509 U.S. 443, 113 S.Ct. 2711 (1993). The ratio is fractionally more than that now permitted by N.C. Gen. Stat. §1D-25 (1997), but certainly not disproportionately excessive in view of the BMW indicia of reprehensibility, relationship to actual and potential harm, and comparison to other civil and criminal sanctions.

V (C)

RPA has submitted a Motion for Entry of a Permanent Injunction [Doc. #504]. "Infringement having been established, it is contrary to the laws of property, of which the patent law partakes, to deny the patentee's right to exclude

others from use of his property." Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1246-47 (Fed. Cir. 1989) (citing 35 U.S.C. § 261). "It is the general rule that an injunction will issue when infringement has been adjudged, absent a sound reason for denying it." Id. at 1247 (citing W.L. Gore & Associates, Inc. v. Garlock, Inc., 842 F.2d 1275, 1281 (Fed. Cir. 1988)). DeKalb has presented no such reason. Although DeKalb argues strenuously that a permanent injunction should not issue because the public interest will be frustrated without access to the patented technology, (Def.'s Mem. Opp. [Doc. #524], at 5-10), the Court determines that the public interest has been appropriately considered in the Court's denial of a stay of this injunction. See discussion infra Part V(D). The cases cited by DeKalb in this regard are otherwise distinguishable.

DeKalb admitted to infringing the '471 patent through its use of the invention in Claim 11 in Roundup Ready corn, and all of DeKalb's defenses have been rejected. Substantial evidence supported the jury's verdict that Claim 11 of the '471 patent was not invalid due to obviousness. See discussion supra Part III(D). DeKalb did not provide clear and convincing evidence that the '471 patent is unenforceable due to inequitable conduct. See discussion supra Part III(F). Therefore, RPA's Motion for Entry of a Permanent Injunction will be GRANTED. The parameters of that injunction will be set forth in an Order filed contemporaneously herewith.

V (D)

DeKalb has requested a stay pending appeal of any injunction issued by the Court [Doc. #514]. Four factors guide the determination of this motion: "(1) whether the stay applicant has made a strong showing that he is likely to succeed on the merits; (2) whether the applicant will be irreparably injured absent a stay; (3) whether issuance of the stay will substantially injure the other parties interested in the proceeding; and (4) where the public interest lies." Standard Havens Prod., Inc. v. Gencor Indus., Inc., 897 F.2d 511, 512 (Fed. Cir. 1990) (quoting Hilton v. Braunskill, 481 U.S. 770, 776 (1987)) (internal quotation marks omitted). Each factor, however, need not be given equal weight, and the formula "cannot be reduced to a set of rigid rules." Id. at 513 (quoting Hilton, 481 U.S. at 777). Indeed, the four stay factors can effectively merge: "[i]n considering whether to grant a stay pending appeal, this court assesses movant's chances for success on appeal and weighs the equities as they affect the parties and the public." Id. at 512-13 (quoting E.I. DuPont de Nemours & Co. v. Phillips Petroleum, 835 F.2d 277, 278 (Fed. Cir. 1987) (internal quotation marks omitted)).

The Federal Circuit has suggested using a sliding-scale approach when evaluating motions for a stay: the stronger the showing the stay movant can make on its likelihood of success on the merits, the less compelling the showing must be with respect to the other three factors. Conversely, if the stay movant can show only a "substantial legal question," then it can obtain a stay only if it prevails on the

other three stay factors. See id. at 513. On the liklihood of success question, DeKalb has reiterated the arguments it made in its motions for judgment as a matter of law and for a new trial. "Although the Court is confident that it ruled correctly on these matters, it cannot fairly be said that none raises a 'substantial legal question.' Equally true, however, is that [DeKalb] has not shown a 'strong likelihood of success on the merits' on any of these issues." Odetics, Inc. v. Storage Tech. Corp., 14 F.Supp.2d 785, 798 (E.D. Va. 1998).

DeKalb would not suffer irreparable injury if an injunction is issued. DeKalb argues that it will lose profits if a stay is denied and this decision is overturned on appeal, particularly because RPA is not required to post a bond to obtain a permanent injunction. (Def. Mem. Supp. Motion Stay [Doc. #515], at 9.) The Court fails to see how this "injury" differs from the "injury" suffered by any unsuccessful patent infringement defendant who faces injunctive relief prohibiting future infringement. Given that "[i]t is the general rule that an injunction will issue when infringement has been adjudged, absent a sound reason for denying it," Richardson, 868 F.2d at 1247, the Court must determine that DeKalb has not made a sufficient showing of injury other than to its business interests. Of course, a patent defendant that is forced to stop infringing a patent upon which it has built substantial business often will suffer such injury. See Windsurfing Int'l, Inc. v. AMF Inc., 782 F.2d 995, 1003 n.12 (Fed. Cir. 1986) ("One who elects to build a business on a product found to infringe cannot be heard to complain if an injunction

against continuing infringement destroys the business so elected."). Certainly, DeKalb has not made a showing of harm that approaches the showing of "employee layoffs, immediate insolvency, and, possibly, extinction," made by the defendant in Standard Havens. Standard Havens, 897 F.2d at 515 (warning that Windsurfing International does not overcome the equities of a case nor should it be applied "mechanically" in a motion for a stay). The Court finds that DeKalb will not suffer "irreparable injury" absent a stay.

While RPA's irreparable harm is presumed in terms of granting a permanent injunction, see Richardson, 868 F.2d at 1246-47, a stay in the injunction during the pendency of an appeal would not substantially harm RPA. RPA is already compensated for the bags of corn DeKalb will sell through the 1999 fiscal year. Moreover, RPA and DeKalb, through their stipulated damages, have established a royalty that DeKalb would pay during the course of the injunction should this Opinion be upheld by the Federal Circuit.

> Of course, a stay would amount to compelling [RPA] to grant [DeKalb] a license for the duration of the appeal, thereby depriving [RPA] of the full benefit of its statutory monopoly right to decide whether, when, and to whom to license its ['471] patent -- but only for the duration of the appeal. Thus, while significant in the injunction calculus, this harm is not decisive in the stay context. Were this not so, such harm, present in every case, would always preclude issuance of a stay.

Odetics, Inc., 14 F. Supp.2d at 799. Moreover, RPA is not yet in the business of producing glyphosate resistant corn seed. Therefore, allowing DeKalb to continue selling Roundup Ready corn during the pendency of the appeal would not threaten

any of RPA's current lines of business. See Standard Havens, 897 F.2d at 515 (staying injunction because, among other things, plaintiff made no showing of "noncompensable injury such as lost market share"). Over the long term, RPA would be irreparably harmed by the absence of an injunction, but RPA has not shown that it will suffer substantial injury if the stay is granted for the relatively brief pendency of an appeal.

Finally, the public interest does not support a stay, although it is a close question. Courts have only in "rare instances" allowed for a stay of a patent injunction because of the public interest. Rite-Hite Corp. v. Kelley Co., 56 F.3d 1538, 1547-48 (Fed. Cir. 1995) (citing cases). DeKalb claims that this case falls into that limited category because the public interest would be severely affected if farmers are deprived of the health and environmental benefits of glyphosate herbicides by not being allowed to buy Roundup Ready corn. (Def. Mem. Supp. Mot. Stay [Doc. #515], at 4-8.) The evidence from the case and in the affidavits presented along with DeKalb's motion support the notion that the use of glyphosate herbicides -- and, correspondingly, of glyphosate-resistant corn seed -- provide substantial benefits. However, it is difficult to square this evidence with DeKalb's own arguments during the trial (which was disregarded by the jury) that it was having difficulty even making a profit with Roundup Ready corn. Clearly our farm system has not become so dependent on Roundup Ready corn seed that enjoining its production would undermine the public's interest in "a healthy farming economy

and adequate crop yields." (Id. at 6.) As stated by RPA, DeKalb's argument overstates the importance of Roundup Ready corn seed to the farm industry because "[t]he fact of the matter is that for decades -- centuries, even -- farmers have grown corn for public consumption without DeKalb's Roundup Ready corn seed" and "as a general rule the public has been able to consume such corn without encountering negative health effects." (Pl.'s Br. Resp. [Doc. #529], at 15.)

Balancing this potential harm to farmers, of course, is the public interest in maintaining the integrity of the patent system. Odetics, Inc., 14 F.Supp.2d at 799-800 (citing 35 U.S.C. § 154). At best, the public interest is a neutral factor in the balancing of harms.

In conclusion, substantial or irreparable harm would not imbue to RPA, DeKalb, or the public if a stay is denied. As DeKalb has not demonstrated a "strong likelihood of success on the merits," the Court will deny its motion for entry of stay of the injunction during the pendency of an appeal. However, the Court will stay the injunction for thirty days after the entry of the Order accompanying this Opinion in order for DeKalb to appeal this ruling regarding the stay to the Federal Circuit.

V (E)

Finally, RPA has moved for further equitable relief [Doc. #504] and increased damages and attorneys' fees [Doc. #476]. The Court will deny these motions.

First, RPA has not demonstrated that it has any right to the GA21 event. Second, RPA has not presented "clear and convincing" evidence of willful infringement by DeKalb. "Willfulness is determined from the totality of the circumstances, and must be proven by clear and convincing evidence." Braun Inc. v. Dynamics Corp., 975 F.2d 815, 822 (Fed. Cir. 1992) (citations omitted). Although RPA has demonstrated intentional, fraudulent acquisition of rights to the OTP by DeKalb, it has done so under a preponderance of the evidence standard. The Court finds that RPA has not met the higher burden of proof required for the imposition of increased damages.

Third, 35 U.S.C. § 285 provides that the court in "exceptional cases may award reasonable attorney fees to the prevailing party." Among the types of conduct which can form a basis for finding a case exceptional are "willful infringement, inequitable conduct before the P.T.O., misconduct during litigation, vexatious or unjustified litigation, and frivolous suit." Beckman Instruments v. LKB Produkter AB, 892 F.2d 1547, 1551 (Fed. Cir. 1989). "Such conduct must be supported by clear and convincing evidence." Id. Again, RPA has not demonstrated by clear and convincing evidence that this case should be considered "exceptional."

This the 8th day of February, 2000.

United States District Judge

## INDEX